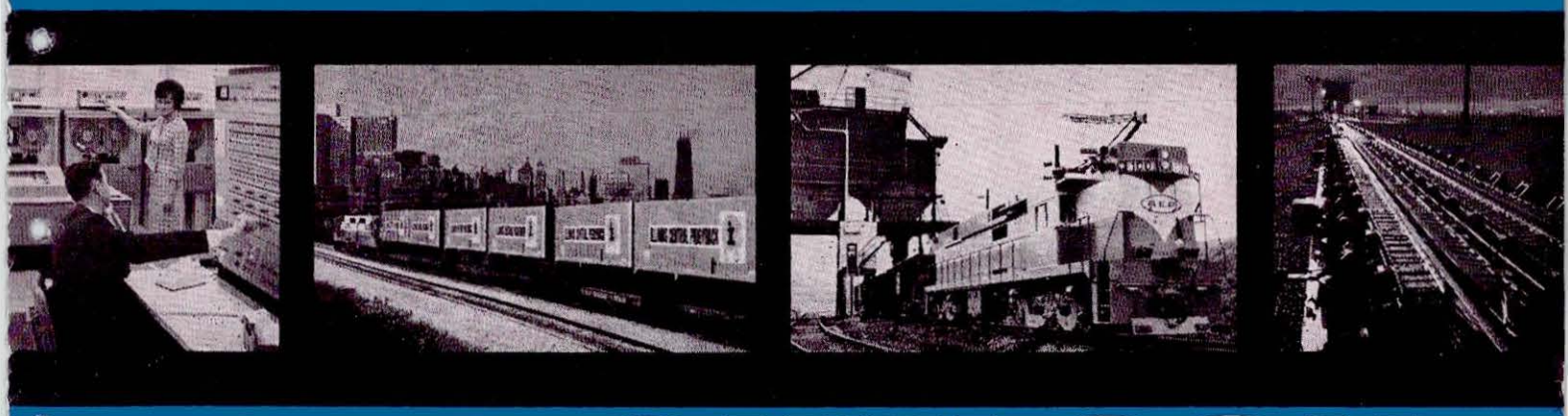
SPECIAL REPORT TO MANAGEMENT

January 19, 1970

RAILWAY AGE

THE TRANSPORTATION WEEKLY

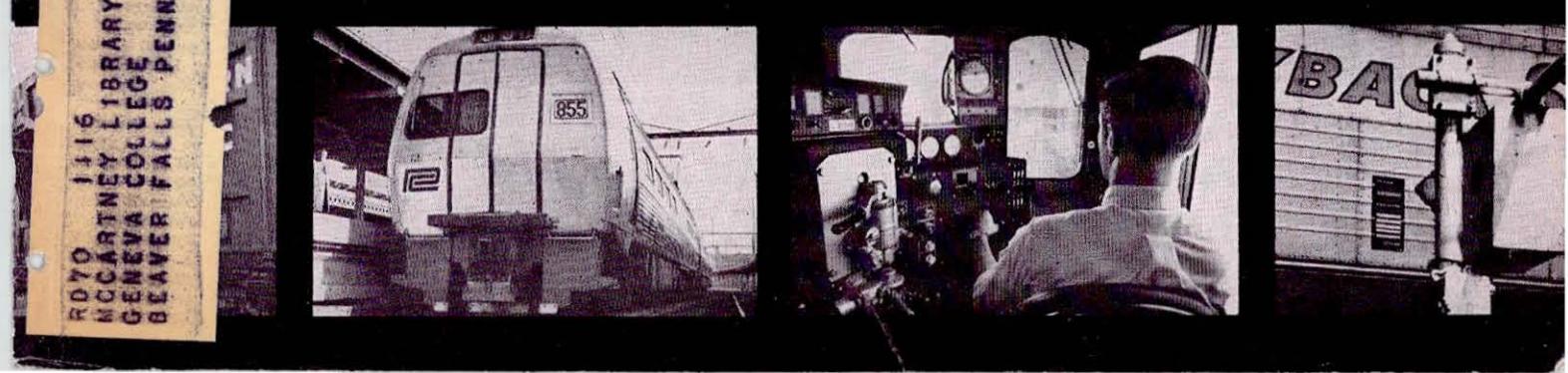
McCARTNEY LIBRARY
GENEVA COLLEGE



1970 OUTLOOK

1969 REVIEW

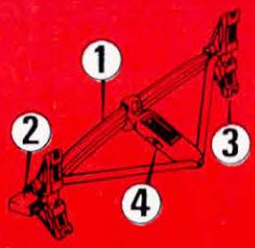
ROTO 1116
McCARTNEY LIBRARY
GENEVA COLLEGE
BEAVER FALLS PENN 15010



OVER 4,000,000 SOLD...

...HERE'S WHY!

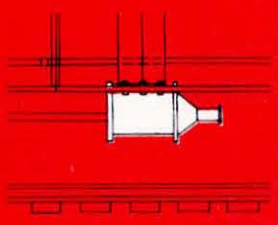
Buffalo Unit Brake Beams are quality built throughout. 4 different metals are used because they are the best answer to 4 different wear problems. The standard braking system utilizing Buffalo Unit Brake Beams gives you low first cost and proven low maintenance.



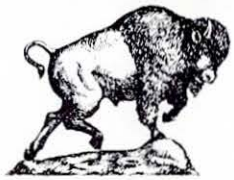
Beam is a one-piece forged steel truss(1). Heat treated wear plates(2). Malleable brake head and strut(3). Hardened steel bushings(4).

Buffalo Brake Beams are designed for all AAR brake shoes. You choose the material and thickness best suited to your needs.

You have the advantage of hand brakes on BOTH trucks and the safety of braking all 8 wheels.



This system mounts the air cylinder on underside of the car, not in the truck. Cylinder protected from road-bed hazards and shocks.



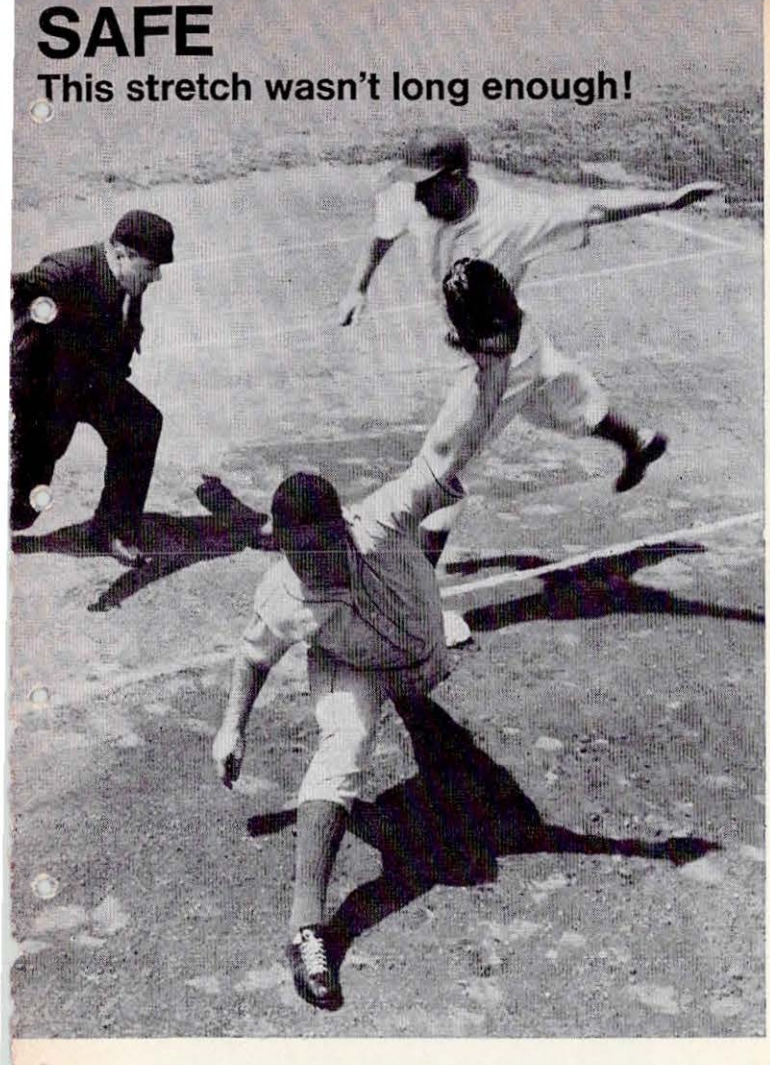
BUFFALO BRAKE BEAM COMPANY

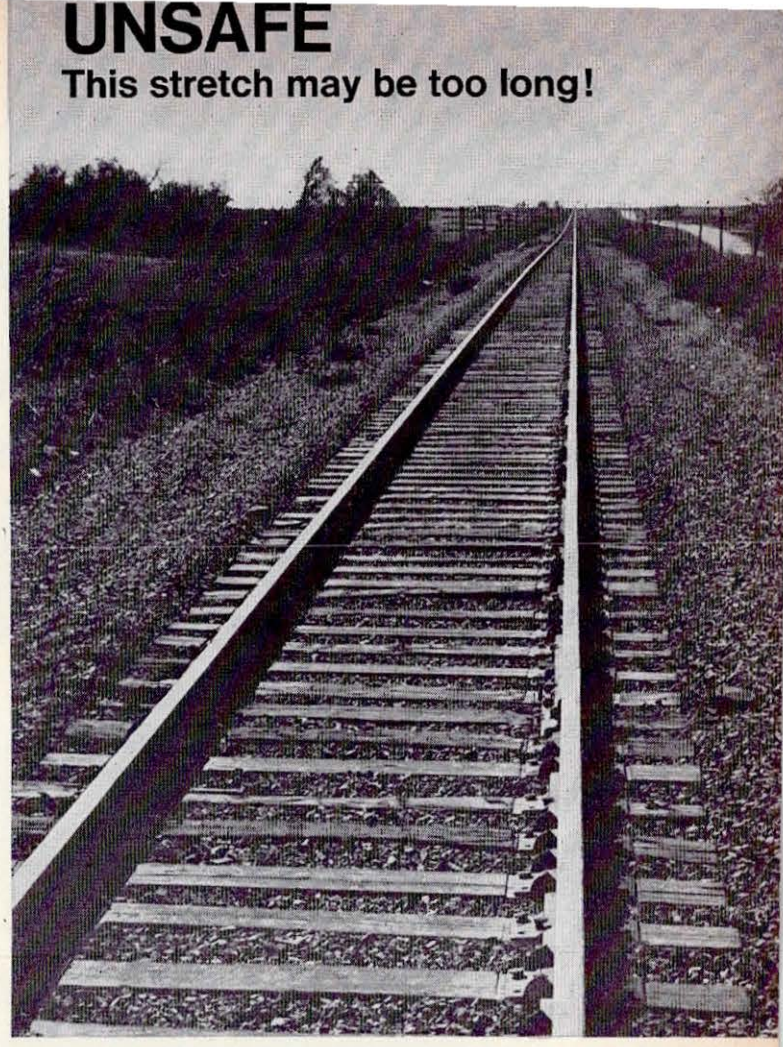
MEMBER RPI RAILWAY PROGRESS INSTITUTE

MANUFACTURERS OF: BRAKE BEAMS • WEAR PLATES • MASTER KEYS

Buffalo, N. Y. 14218 • Lackawanna, N. Y. 14218 • Hamilton, Ont., Canada

Circle 1 on coupon page 90





Our new rail-mounted SERVOSAFE® Hot Box Detective™ prevents axle burn-offs and derailments.

It's a good thing to have on your railroad.

But, for safety's sake, don't stretch a good thing!

Do you have long stretches of track without SERVOSAFE protection?

Recent studies have revealed that such factors as heavier car loadings, faster train speeds and greater accelerations have combined to increase the incidence of overheated journal boxes. This has prompted many railroads to review their spacing of hot box detectors. Up to now, the average spacing has been 25 to 30 miles apart along line-of-road. Under today's conditions, however, a hot box can develop in less than 25 miles and cause a derailment *between* detectors.

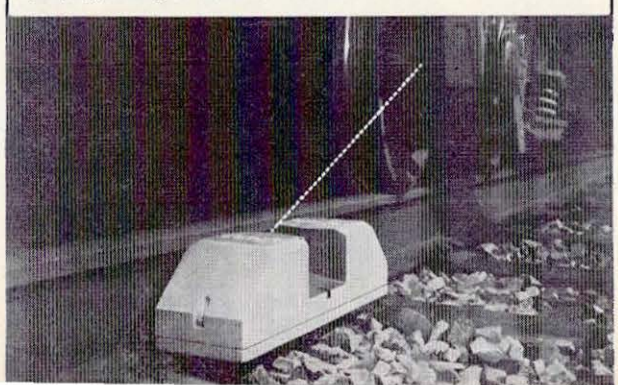
One solution becomes self-evident: closer spacing of hot box detectors for more protection. A SERVOSAFE system will not prevent a hot box—but it will detect, locate and warn of a hot box before the condition worsens into a dangerous, costly axle burn-off and derailment!

Will it cost you more to get this additional SERVOSAFE protection? Not really. Here are some reasons why not:

Our new Model 8808 SERVOSAFE system features patented rail-mounted scanners and solid state electronic data processing for the fastest, most precise detection of hot boxes. It allows remedial action to be taken *before* a failure occurs, and helps cut down the high costs of major salvage or replacement. The cost of installation and maintenance is appreciably reduced by eliminating the need for concrete foundations, special ties and expensive roadbed preparation. The rail-mounted scanner can be easily removed for maintenance or relocation. Finally, compare the cost of a SERVOSAFE with the $200,000 involved in just one derailment that could be prevented.

That's why most prudent, progressive railroad managements agree when we say, "More SERVOSAFE protection isn't costly—*lack of it is!*"

Model 8808 SERVOSAFE Hot Box Detective Rail-mounted scanner "looks" at journal bearing behind truck frame with a vertical, close-in target scan for greater uniformity and accuracy. Scanner is securely clamped to the rail (no drilling required). Accuracy is not affected by rail pumping, running or lateral movement.



servo

SERVO CORPORATION OF AMERICA
Hicksville, N.Y. 11802 • Tel. 516-938-9700
European Office: Lausanne, Switzerland

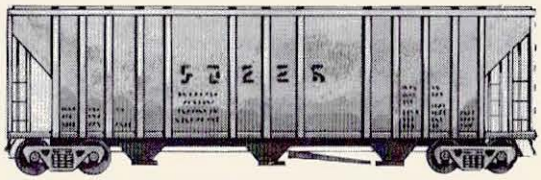
Serving Safety Through Science

Since 1957, more than 1,000 SERVOSAFE Hot Box Detective systems have been put into service on 54 of the world's major railroads, and have compiled an unequaled record of safety improvement and cost reduction.

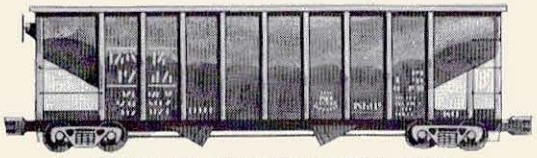
Circle 4 on coupon page 90

MEMBER RPI

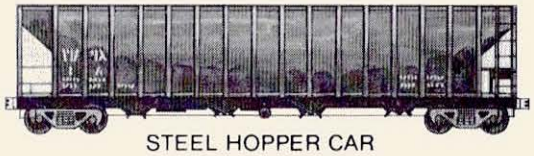
Introducing the cars you go to Magor for.



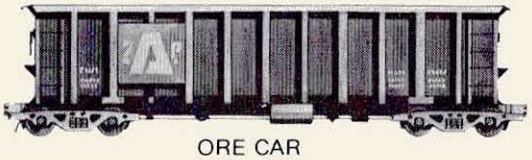
STEEL OR ALUMINUM COVERED HOPPER CAR



STEEL OR ALUMINUM COAL CAR



STEEL HOPPER CAR



ORE CAR

STEEL OR ALUMINUM GONDOLA CAR

FLAT CAR

AIR DUMP CAR

WOOD CHIP CAR

These are the cars you go to Magor for, because these are the cars that Magor builds best... these are the cars that Magor builds most... and, because we build so many, these are the cars that Magor builds with the lowest price tags. In fact, you can even get big-volume prices on small quantities by placing tack-on orders for these cars.

Call us for quotes on these cars. But don't stop there. Try us on others, too. Who knows—together we may start a whole new trend on what cars you go to Magor for.

Magor

MEMBER RPI RAILWAY PROGRESS INSTITUTE

660 Van Houten Ave., Clifton, N.J.

A DIVISION OF FRUEHAUF CORPORATION

Circle 5 on coupon page 90

RAILWAY AGE

January 19, 1970 • Vol. 168, No. 2

THIS WEEK

1970 OUTLOOK

29 Spending: A warming trend?

33 70,000 freight cars, 1,300 locomotives forecast

39 Tie and rail renewals will rise

42 C&S outlays put at $114 million

45 Labor: Problems old and new

49 A new sense of urgency in Washington

1969 REVIEW

54 Review of 1969 railway operations

68 Statistical review of 1969

DEPARTMENTS

44	As the Editor Sees It	97	Railway Market
97	Freight Carloadings	8	Short and Significant
14	Lines on Labor	88	Supply Trade
7	Monday Morning Report	104	Viewpoint
97	New Equipment	91	Watching Washington
90	New Products Report	13	Week at a Glance
86	People in the News	100	You Ought to Know

. . . AND COMING NEXT WEEK

FREIGHT TRAFFIC ISSUE: Down South, GM and Ford have an automobile "assembly line" that stretches 455 miles—all but one mile of which is otherwise known as Southern Railway Train No. 51. The Jan. 26 issue of Railway Age describes how this train came to be, and what it does. Also: How Western Pacific uses computer technology to improve service to shippers. Like all Freight Traffic Issues, this one will be sent to nearly 10,000 shippers in addition to our regular subscription list.

Editorial and Executive Offices
New York, N.Y. 10007, 30 Church St.

ROBERT G. LEWIS: Publisher
LUTHER S. MILLER: Editor
FRED C. MILES: Executive Editor

Mechanical: Fred N. Houser
Associate Editor: Philip Harrison
Car & Locomotive Cyclopedia: Charles L. Combes
Art Director: Maurice H. Mates
Art Editor: Marvin Friedman
Editorial Assistant: June Meyer
Market Research: Robert N. Paltos
Librarian: Edith C. Stone
Production Manager: Fred B. Hecht
Manager—Contract Department: Constance Nicolai

Editorial and Executive Offices
Chicago, Ill. 60602, 29 E. Madison St.

C. JAMES FISHER: Vice President—Sales
GUS WELTY: Senior Editor
Mechanical: Robert D. Bartley
Engineering: Merwin H. Dick R. E. Dove
Signaling & Communications: Robert W. McKnight
Editorial Assistant: Wanda Brown

Washington, D.C. 20004, National Press Bldg.
Washington Editor: Frank Malone

Brighton, Sussex, England
8 St. George's Place
International Editor: John Levett

Contributing Editors:
Norman E. Gillespie
3205 Chelsea
Orlando, Florida 32803

Charles Layng
6019 Nashua Ave.
Orlando, Florida 32809

E. L. Woodward
876 Chattanooga Ave.
Pacific Palisades, Calif. 90272

GEORGE DUSENBURY: Editorial Director

FOR LIST OF SALES OFFICES SEE ADVERTISING INDEX PAGE

Member of ABC RPI

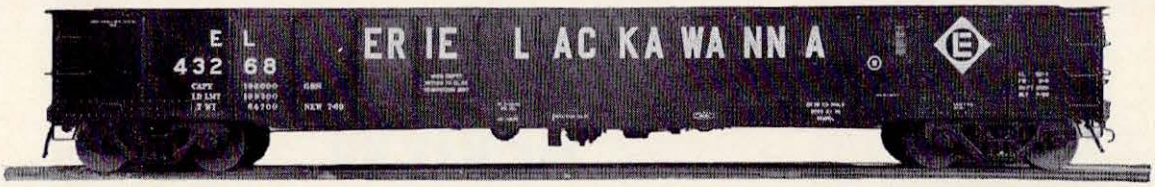
Railway Age, established in 1856, is indexed by the Business Periodicals Index, the Engineering Index Service and the Public Affairs Information Service. Name registered in U.S. Patent Office and Trade Mark Office in Canada.
Published weeky (except for six issues combining two-in-one) by the Simmons-Boardman Publishing Corporation, 508 Birch St., Bristol, Conn. 06010.
Railroad employees' subscription rate, U.S. possessions, Canada and Mexico, $6 one year, $9 two years, all others $15 for one year, payable in advance and postage paid. To railroad employees elsewhere in the western hemisphere, $10 a year; in the eastern hemisphere, $15 a year. Single copies 60¢, except special issues.
Address all subscriptions, change of address and correspondence concerning them to Subscription Dept., Railway Age, P.O. Box 530, Bristol, Conn. 06010.
Change of address should reach us three weeks in advance of next issue date. Send old address with new enclosing, if possible, your address label. Post Office will not forward copies unless you provide extra postage.

Circulation Dept.: John Rogers Director of Circulation, 30 Church St., New York, N.Y. 10007. POSTMASTER—SEND FORM 3579 TO P.O. Box 961, BRISTOL, CONN. 06010.
Printed at the Hughes Printing Co., 34 North Crystal St., East Stroudsburg, Pa. 18301. Second-class postage paid at Bristol, Conn., and at additional mailing offices.

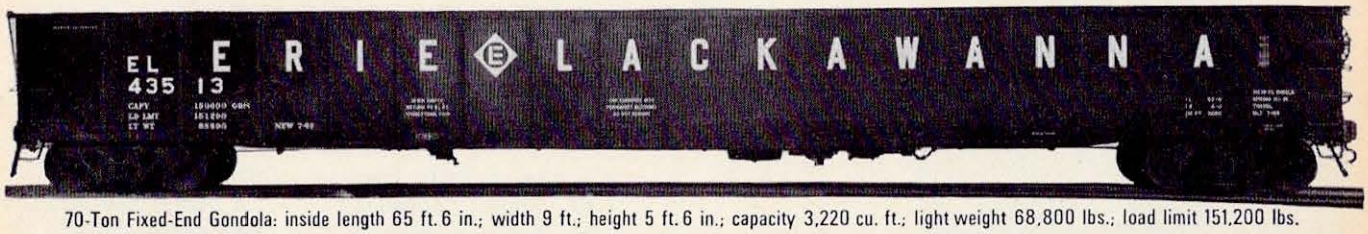
Erie supplies the cars steel makers need

100-Ton Extended-End Gondola: inside length 52 ft. 1 in., between wood lining; width 9 ft. 6 in.; height 4 ft. 6 in.; capacity 2,228 cu. ft.; light weight 68,400 lbs.; load limit 194,600 lbs.

70-Ton Extended-End Gondola: inside length 65 ft.; width 9 ft.; height 5 ft. 6 in.; capacity 3,217 cu. ft.; light weight 72,800 lbs.; load limit 147,200 lbs.



100-Ton Fixed-End Gondola: inside length 52 ft. 1 in., between wood lining; width 9 ft. 6 in.; height 4 ft. 6 in.; capacity 2,228 cu. ft.; light weight 64,700 lbs.; load limit 198,300 lbs.



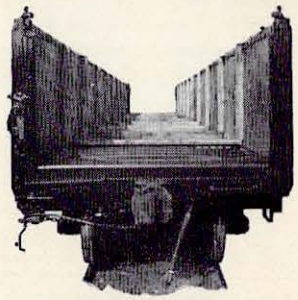
70-Ton Fixed-End Gondola: inside length 65 ft. 6 in.; width 9 ft.; height 5 ft. 6 in.; capacity 3,220 cu. ft.; light weight 68,800 lbs.; load limit 151,200 lbs.

70-Ton Drop-End Gondola: inside length 65 ft. 1 in., between wood lining; width 9 ft.; height 5 ft. 6 in.; capacity 3,213 cu. ft.; light weight 71,600 lbs.; load limit 148,400 lbs.

Greenville supplies Erie

Steel makers are turning out a greater variety of products than at any time in our history. Along with that variety has come the need for new, different sized, different types of cars to carry these new materials.

Alert to that need, The Erie/Lackawanna worked with Greenville to tailor its fleet to handle the new demands of today's steel producers. Erie added to its flexibility by having Greenville modify five different standard cars to the special needs of the steel shipper. Each Greenville car offers a more efficient way to move steel. The cars represent the rare combination of versatile car designs and production skills which make



Greenville an uncommonly good place to start in selecting the best car for the job.

Talk with us. We don't mind taking our standard designs and changing them to meet your special needs.

GREENVILLE STEEL CAR COMPANY
Subsidiary of Pittsburgh Forgings Company
GREENVILLE, PENNSYLVANIA

Circle 6 on coupon page 90

MONDAY MORNING REPORT

AT LAST: COMPUTERIZED TARIFFS

The filing of standardized, computerized tariffs with the Interstate Commerce Commission is now a reality. The culmination of three years' research and planning, this landmark event is the result of a coordinated effort between railroads and International Business Machines, Inc. As a result, rail data service centers in New York, Atlanta and Chicago are now translating the entire library of rail tariffs into a standard language usable by all rail and shipper computers.

A THREE-YEAR PROJECT COMES TO FRUITION

Chief traffc officers of the Traffic Executive Association—Eastern Railroads, the Southern Freight Association, and the Executive Committee—Western Railroad Traffic Association, set up a Joint Railroad Traffic Computerization Committee in 1966. Created to "develop, design and implement" computer application of rail rate tariffs, the JRTCC worked with IBM for three years to develop two computer programs. The results are called the Tariff Publishing System and the Traffic Profile Analysis System. The first tariffs were published January 7 in both paper-bound and magnetic tape form. (The paper-bound copy will still be considered the official document.)

ONE PROGRAM EXTRACTS INFORMATION FROM THE OTHER

The Tariff Publishing System enables the user to update his basic tariff data on magnetic tape and to print out selected information. The selected information is extracted by the Traffic Profile Analysis System, based on the shipper's description of his requirements. The first computerized tariffs are serving as a guideline for some of the new standards on which future computerized rail rate tariffs will be patterned. These standards include station nomenclature, commodity coding and rate displays.

WHAT IT MEANS TO CARRIERS AND THEIR CUSTOMERS

The new computerization program will, claim its sponsors, reduce the cost and time of paper work, provide management with a more accurate data base for decision-making, and give shippers fast and clear tariff advice. Looking toward a total system, which will take from two to five years, JRTCC foresees automatic rate retrieval, computerized billing and more efficient methods of data exchange between carriers and shippers. For the consumer, all this should add up to improved transportation service—and possibly lower costs, says JRTCC.

SHORT AND SIGNIFICANT

Battelle's Harris joins AAR as research chief

Dr. William J. Harris, Jr., director of Battelle Memorial Institute's Washington office, has been named vice president in charge of the Association of American Railroads' Research and Testing Department, effective Jan. 19. The selection of Dr. Harris ended a nine-month search for a scientist to head up the AAR's expanded program of research. Prior to joining Battelle in 1962, Dr. Harris was associated with the National Academy of Sciences, where he served as executive secretary of the metallurgy advisory board, as executive director of the materials advisory board, and as assistant executive secretary in charge of planning for the division of engineering and industrial research. At one time he headed the ferrous alloys group of the Naval Research Laboratory. A 1940 graduate of Purdue with a B.S. degree in chemical engineering, Dr. Harris also holds graduate degrees from Purdue and M.I.T.

Penn Central's mini-train is in business

Penn Central's first "mini-grain-train" is now operating out of Indianapolis. The train departs Indianapolis in the morning with 10 empty covered hopper cars and returns in the evening with 35,000 bushels of grain. Operating within a 90-mile radius of the Indiana capital, the train has 11 different routes. It is scheduled at the direction of the shipper who contracts for the service and has exclusive use of the train. Penn Central cites these main advantages: (1) lower rates for the shipper than conventional service and rates that are competitive with trucking; (2) more frequent service; (3) fast "same day" service; (4) better utilization of grain-car equipment. Penn Central negotiated special labor agreements to permit the new service.

New York attorney to mediate in fireman dispute

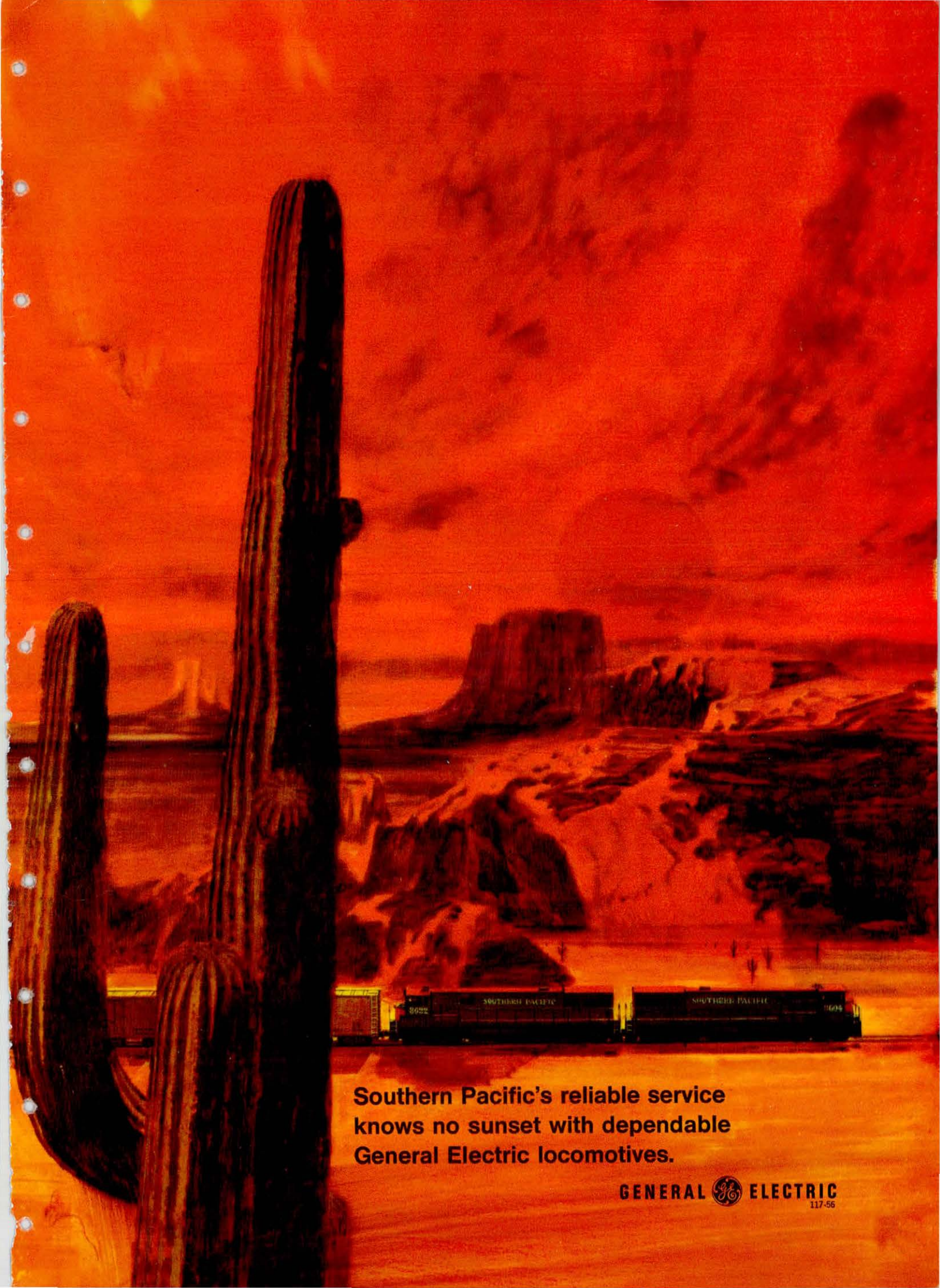
Labor Secretary Shultz has named Frederick Livingston, a New York attorney, as special mediator in the fireman-manning dispute between the United Transportation Union and the railroads. Mediation sessions are scheduled to begin Jan. 26 in Washington. Livingston, a partner in the law firm of Kaye, Scholer Fierman, Hays and Handler since 1947, is reported to have "extensive experience" in labor-management affairs.

Canadian roads will hike rates by 3% Feb. 1

A 3% railroad rate increase — estimated to yield $13 million a year — will become effective in Canada Feb. 1. This increase will supersede temporary 2%-to-4% increases which were imposed last September and expired Dec. 31. The higher rates will not apply to export grain and flour, traffic moving to and from the U.S., and most traffic moving to, from and within the Maritime Provinces. Also exempt is traffic carried in Canada at tariffs related to U.S. rates.

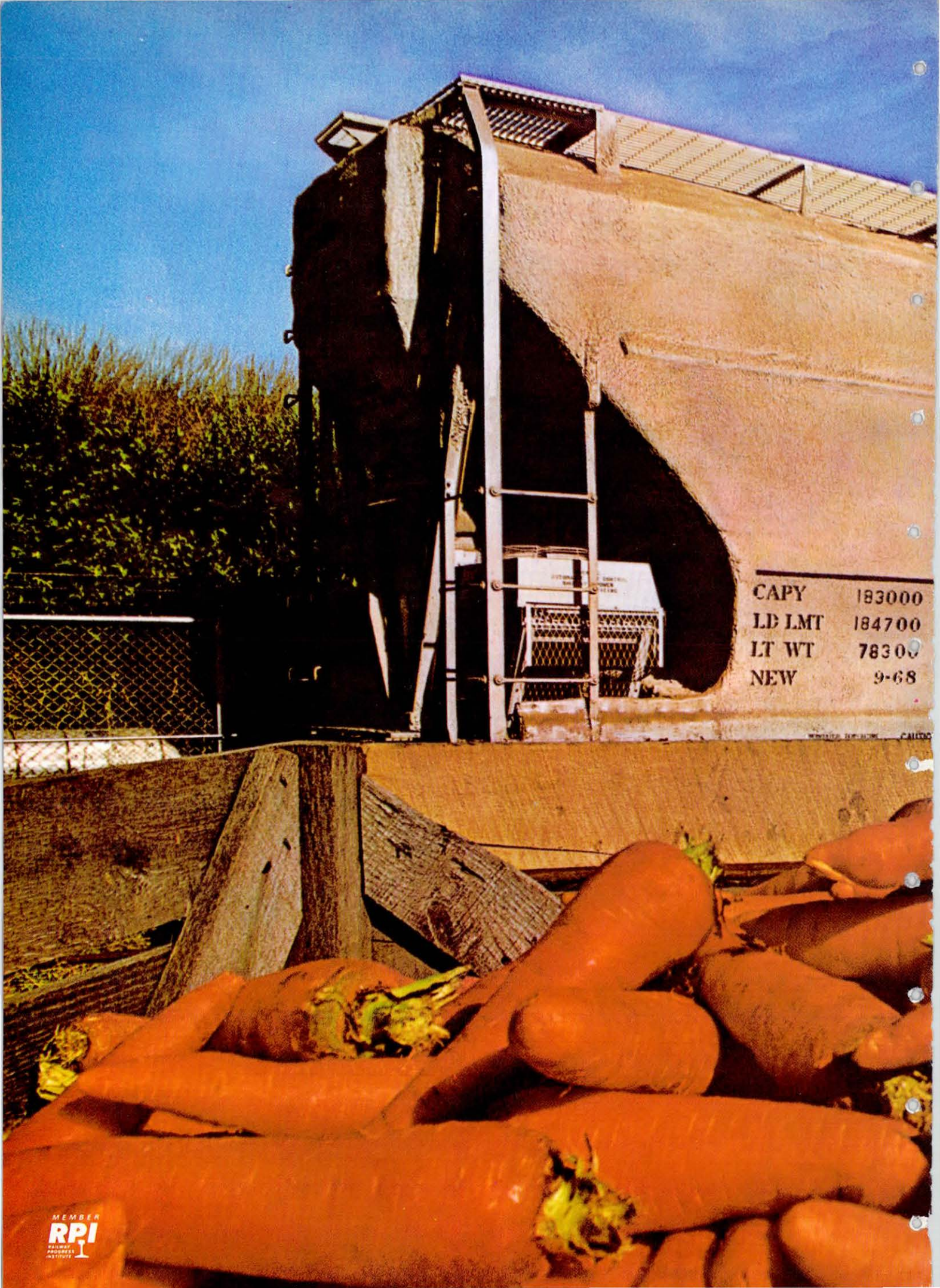
Truckers report higher revenues, lower profits

Gross revenues of trucking companies subject to ICC regulation rose by 8% in 1969, to an estimated $13.3 billion. But expenses climbed at an average rate of 10%, with the result that net income dropped to $240 million in 1969, compared with $276 million in 1968, according to William A. Bresnahan, managing director of American Trucking Associations. "We have just about reached the optimum in our productive capabilities," said Bresnahan. "We have sought—and are seeking—relief from Congress on the present restrictive 'freeze' on truck sizes and weights. Aside from rate increases, this is the only way in which the industry can relieve this squeeze." Commenting on the "considerably lower rate of progress scored in 1969," Bresnahan noted that intercity truck ton miles increased by only 2½%—from 396 billion in 1968 to 406 billion in 1969. His view of 1970 is one of "considerable caution, particularly in the first six months. Total revenue in the first half of the year is expected to continue rising, but expenses also appear likely to continue their climb—but at a faster rate."



Southern Pacific's reliable service knows no sunset with dependable General Electric locomotives.

GENERAL ELECTRIC
117-56



MEMBER RPI RAILWAY PROGRESS INSTITUTE

TO HARVEST A NEW CROP OF PROFITS, TALK TO ACF.

ACF's new Conditionaire has a unique temperature control system. It keeps perishables fresher, longer than any car on the rails. Lets you deliver produce in top quality, whatever the weather.

And Conditionaire can carry up to 183,000 pounds of produce without crating.

So you save on bulk economies. Cut spoilage costs. Eliminate crating expenses. Reaping profits is easy: you put more produce into Conditionaire, and you get more out.

Cultivate new markets and freshen your profits. Talk to ACF Industries, Incorporated, American Car & Foundry Division, 110 Clark St., St. Charles, Missouri 63301.

ACF INDUSTRIES

Alco will continue to take care of its own.

Alco is still vitally interested in the proper operation and maintenance of their engines and locomotives.

We intend to make sure that Alco engines and locomotives live normal, productive lives. Alco Products Service, Inc. is organized and staffed to do it.

Alco Products Service, Inc. will continue to warehouse new and rebuilt replacement parts and to maintain the technical backup team to satisfy customer requirements. Our people are available to provide parts and service recommendations and to give individual attention to your needs.

In short, we'll continue to provide improved service on all Alco products. Alco Products Service, Inc., 1 Nott Street, Schenectady, N.Y. 12305.

ALCO

Alco Products Service, Inc.

WEEK AT A GLANCE

U.S. suppliers share major Brazilian order

U.S. rail-transit suppliers have scored a major breakthrough in the overseas market. A contract to supply 198 cars for the new transit system of Sao Paulo, Brazil, has gone to a consortium that includes the Budd Co.; Budd's Brazilian licensee, Material Ferroviario SA Mafersa; Westinghouse Electric International; Westinghouse Electric's Brazilian licensee, Industrias Villares SA; and also the Brazilian licensee of the Westinghouse Air Brake Co. (WABCO), Freis e Sinais do Brasil SA (FRESINBRA). These companies form what is known as the Consorcio Metro Carro. The Sao Paulo contract is valued at between $50 million and $55 million, about half of which represents U.S. participation. The contract was won in competition with a West German consortium. The award is all the more significant in that West German consultants were in on the ground floor of planning the new Metro system.

First cars are to be delivered in the second quarter of 1971, with the order to be completed in the third quarter of 1973. The cars will be assembled by Mafersa in Sao Paulo. Mafersa will supply the stainless-steel bodies. Budd will supply the trucks, with Westinghouse Electric and Villares furnishing traction motors and controls. FRESINBRA will supply brakes and couplers.

The Brazilian order represents the first time in recent history that U.S. suppliers have been able to penetrate the foreign transit market in a big way. Industry observers feel it is certain to lead to other efforts.

Turbos start cold-weather tests in Canada

Canadian National's Turbotrain has started a long series of cold weather tests. If the results prove satisfactory, then two of CN's five Turbos could be in regular service between Montreal and Toronto by next autumn. CN's Turbos went into service in December 1968, but one of the coldest winters on record froze up exposed electrical components. United Aircraft, the principal contractor, and CN technicians have since been at work making modifications to the suspension system, air ducts, and electrical and control systems. According to a United Aircraft spokesman, preliminary tests, even in below zero weather, have been good. Heavy testing between Montreal and Toronto will begin this week.

(A U.S. version of the Turbo—dubbed the Turboliner—continues to run daily between New York and Boston, with few problems, said the UA spokesman.)

Shippers forecast 4% rise in first-quarter traffic

Railroad freight ton-miles will be 4% higher in first-quarter 1970 than they were in the corresponding period a year ago, according to forecasts of the 13 Regional Shippers Advisory Boards. This estimate is based on an anticipated 2.5% increase in first-quarter carloadings. (Due to larger cars and longer hauls, the ton-mile increase is larger than the increase in loadings.)

Only three of the 13 boards expect traffic declines in their areas. These are Pacific Coast, Pacific Northwest and New England.

Coal traffic is expected to show great strength in this year's first three months. Coal and coke loadings will rise by 4.2% to a total of more than 1.48 million, the Shippers Boards forecast. Increases are also predicted in loadings of grain (9%), citrus fruits (16.3%), ore and concentrates (8.1%), autos and trucks (6%).

REGIONAL BREAKDOWN

Region	Actual Loadings First Quarter, 1969	Estimated Loadings First Quarter, 1970	Percent Change
New England	79,161	78,650	.6 Dec.
Atlantic States	431,865	434,749	.7 Inc.
Alleghany	597,472	629,787	5.4 Inc.
Ohio Valley	841,410	852,463	1.3 Inc.
Southeast	1,021,141	1,050,455	2.9 Inc.
Great Lakes	444,756	450,536	1.3 Inc.
Central Western	220,311	224,629	2.0 Inc.
Midwest	628,864	641,591	2.0 Inc.
Northwest	248,316	270,195	8.8 Inc.
Trans-Missouri-Kansas	321,620	350,861	9.1 Inc.
Southwest	404,514	414,502	2.5 Inc.
Pacific Coast	308,488	304,654	1.2 Dec.
Pacific Northwest	199,700	185,659	7.0 Dec.
Total	5,747,618	5,888,731	2.5 Inc.

GUS WELTY

LINES ON LABOR

PLEASE DON'T PITY the poor old Erie Lackawanna any more. This is the road the jokesters used to call the "Weary Erie," or the "Weary & Lackin' Wampum." Erie and Lackawanna merged, they said and the whole—the whole deficit—was greater than the sum of the parts. Now, though, nobody's laughing. EL has become a tough competitor in a tough transportation market. It's winning business, not losing it.

HOW DID THIS CHANGE HAPPEN? Money was important, of course, for such things as better track and improved motive power. People were important, too—for the kind of cooperation people, management and union alike, can give when they really want to make an enterprise swing.

WORKING TOGETHER, EL's people have come quite a ways. One good illustration: The interdivisional-run agreements which have helped the road cut a good hour and a half from its through freight schedules. These agreements have been in effect for almost a year now, with the United Transportation Union (Firemen and Trainmen's Committees) and the Brotherhood of Locomotive Engineers. Obviously, they've worked well. A six-month cancellation clause in several of the agreements was never exercised. EL calls the interdivisional-service arrangement "an important contribution to the continued improvement of our competitive position." Local union officers and the employees are described as "generally enthusiastic . . . they've found that in actual operation, the . . . . service results in less time great away from home with no reduction in earnings."

EL'S AGREEMENTS cover 640 miles of mainline operation, between Marion, Ohio, and Port Jervis, N.Y. In the old days, this was six crew operating districts, with runs ranging from 84 to 139 miles. Now, it's three districts, with runs ranging from 189 to 244 miles.

IT'S PROBABLY A MISTAKE to try to take one case and draw broad conclusions. Perhaps the men representing EL's operating employees are just naturally cooperative. Perhaps the employees and their representatives, seeing EL's troubled condition, just decided it was in their own interest to lend a hand with service improvement, and a strengthening of their railroad's competitive stance. "Perhaps" a lot of things. The point is that EL, UTU and BLE did get together on an arrangement which has made the road stronger and apparently has satisfied all concerned with its fairness. That's important enough all by itself—without the need for drawing those broad conclusions.

Baker reported set to succeed Cherington at DOT

After floating around for nearly a year in relative obscurity as deputy undersecretary at the Department of Transportation, Charles D. Baker is ready to move into the DOT policy seat.

It became known last week that Baker will succeed Paul W. Cherington as assistant secretary for policy and international affairs.

Baker hasn't been heard from in much volume. His limited exposure, however, has produced good reaction from government, management and labor.

In a talk on containerization, Baker commented: "The old ways of doing business simply won't hack it any more. The advent of containerization has been called a revolution. Personally, I don't care what you call it, as long as you realize that it means things have changed a great deal . . . . If the transportation industry as a whole can rise to the occasion [to work out through-service arrangements] we'll have something really new and exciting. If not, much of the potential of containerization will be lost . . . . Common ownership of different transportation modes is an issue that transcends containerzation; however, it seems to me that government must review this issue in the new light of containerization."

And in response to a charge that the DOT was dragging its feet, Baker has said: "We've all inherited a regulatory and administrative environment that is archaic and out of step with technological change."

Before moving to Washington, Baker was vice president of Harbridge House, Inc., a Boston international management consulting firm. His other experience included earlier management consulting and six years as a purchasing section supervisor for Westinghouse Electric Corp. He holds a master's degree in business administration from Harvard (1955).

Cherington came to the DOT from Harvard, where he had been part of the business faculty since 1950 and James J. Hill Professor of Transportaton since 1963. On accepting the DOT appointment, Cherington made it clear that he would not remain for a full term. He is expected to return to a teaching position at the Harvard Business School. By March, his work on DOT's expected statement on transportation will be finished.

(More news on page 24)

if it rolls on rails specify

WAUGH

Type 730-E Friction Rubber (Urethane) Draft Gear

Only Full-Capacity "E" Draft Gear For Pre-1961 Cars

Because coupler horn clearance to striker on most pre-1961 cars is 3" or under, all other "E" specification draft gears will allow the couplers to hit the striker before reaching rated capacity. Only Waugh Model 730-E attains full rated capacity within 2¾" travel-nominal. It fits the Standard 24⅝" draft gear pocket, produces 51,300 foot pounds official capacity, meets AAR Specification M-901-E. Urethane springs assure effective operation in extreme temperature ranges from —40° to 175°F.

The Best in Design, Engineering and Service comes from:

MEMBER RPI RAILWAY PROGRESS INSTITUTE

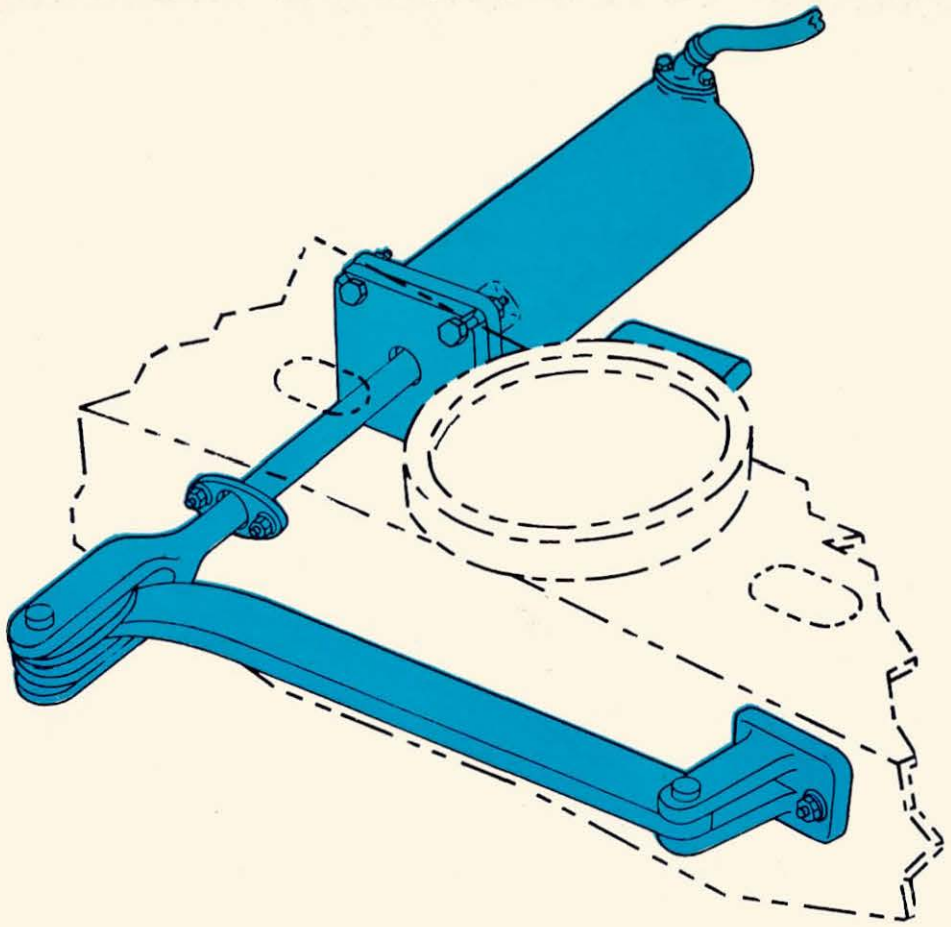
DRESSER TRANSPORTATION EQUIPMENT DIVISION

Dresser Industries, Inc., 332 S. Michigan Ave., Chicago, Ill. 60604 • (312) 939-1280

Sales Offices: Atlanta • Baltimore • New York • Philadelphia • Roanoke • St. Louis • San Francisco
In Canada: W. K. Davidson, Sales Agency, Montreal

Circle 21 on coupon page 90

Who said TMB means "Too Many Bucks"?



You can't say *that* about the Abex High-FrictionTMB that gives maxi-performance with mini-maintenance!

"TOO MANY BUCKS"? Right from the start you *save* bucks on installed costs.

You get greater payload by reducing car weight. The Abex HF brake—together with shallow bolsters—weighs up to 415 pounds less than any other truck-mounted brake.

You save bucks on scheduled maintenance. Approximately 35 bucks per car every COT&S. The Abex brake has one instead of two cylinders per truck. The cylinder is sprung just like the body-mounted type.

You save bucks on inventory. Beams, levers, rods, pins, shoes and keys are standard riptrack inventory items.

You save bucks on replacement of burnt-in beams—save more bucks on car downtime since the AAR #18 beam used in the Abex truck-mounted brake is stocked all over North America.

With the Abex HF brake, you reduce to half the number of hose assemblies – half the number of truck-to-body hand brake connections—which saves repair costs after derailment.

Not only do you save a *lot* of bucks when you install the Abex HF brake, but you get *proven* improved performance. Break-away stop tests confirm shorter stop distances with the Abex brake. It delivers more force to the brake shoes than any other TMB available and does it equally at all brake heads.

Does the superior mechanical efficiency of the Abex HF brake have a profound effect on performance? *You bet it does!* Using the present No. 66 hand brake, the Abex brake will hold a loaded car on a 3 per cent grade. This is vitally important.

For the TMB that saves you "The Most Bucks" in the long run – and is precisely designed for today's more specialized freight cars—get in touch with your Abex representative. *And save many bucks!*

MEMBER RPI RAILWAY PROGRESS INSTITUTE

Abex CORPORATION
Railroad Products Group
VALLEY ROAD, MAHWAH, N. J. 07430

Circle 10 on coupon page 90

"We've had good experience with Shell Tornus® Oil in our turbocharged units. And they probably work harder than any in the country."

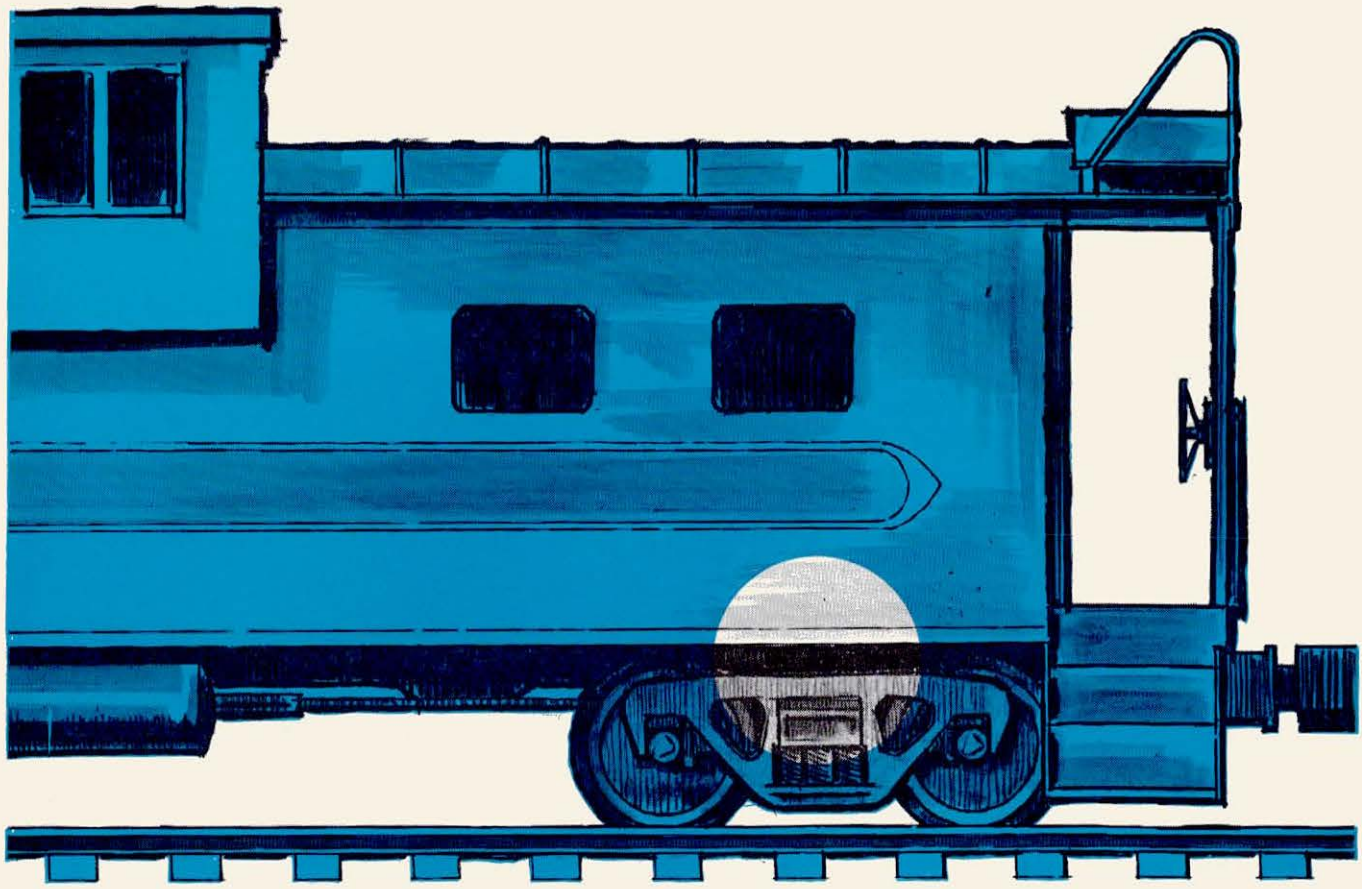
P. D. Starr, Chief Mechanical Officer, Denver & Rio Grande Western

SHELL

MEMBER RPI RAILWAY PROGRESS INSTITUTE

Circle 11 on coupon page 90

How can a crew go first-class in a caboose?

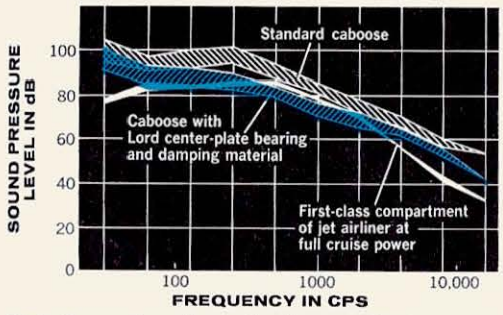


Lord knows.

Now a caboose can be quieter than the first-class compartment of a jet airliner.

Here's proof:

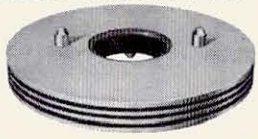
Field tests show lower noise level



This dramatic noise reduction results from two Lord innovations: a new center-plate bearing, and structural damping material.

The bearing (shown here) is a bonded rubber-and-steel lamination installed in the center-plate. It isolates the caboose body from track and truck vibrations. Cushions annoying and fatiguing floor vibrations. Accommodates relative motion without lubrication or wear.

New laminated center-plate bearing.



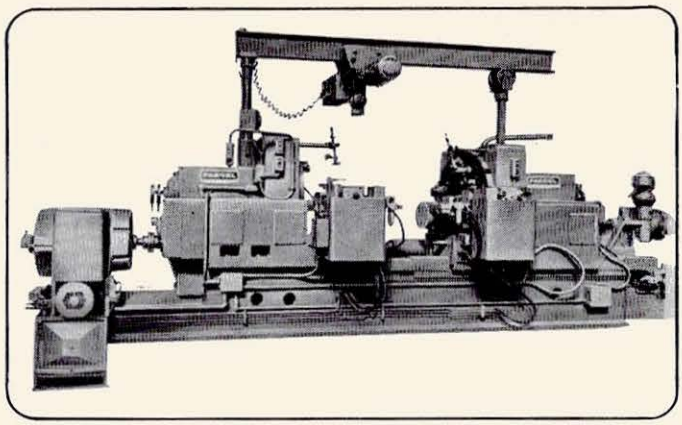
Lord damping material applied to panel surfaces will often lower sound levels even more. Such damping is extremely valuable in curtailing noises resulting from vibration-excited panel resonances.

So now your caboose interiors can be quiet. So quiet that conversation and radio communication can be carried on in normal tones. So quiet that crew comfort and efficiency get a boost.

To add "first-class quiet" to your cabooses, call or write: *Railroad Products Group, Lord Manufacturing Company, Division of Lord Corporation, Erie, Pa. 16512.*

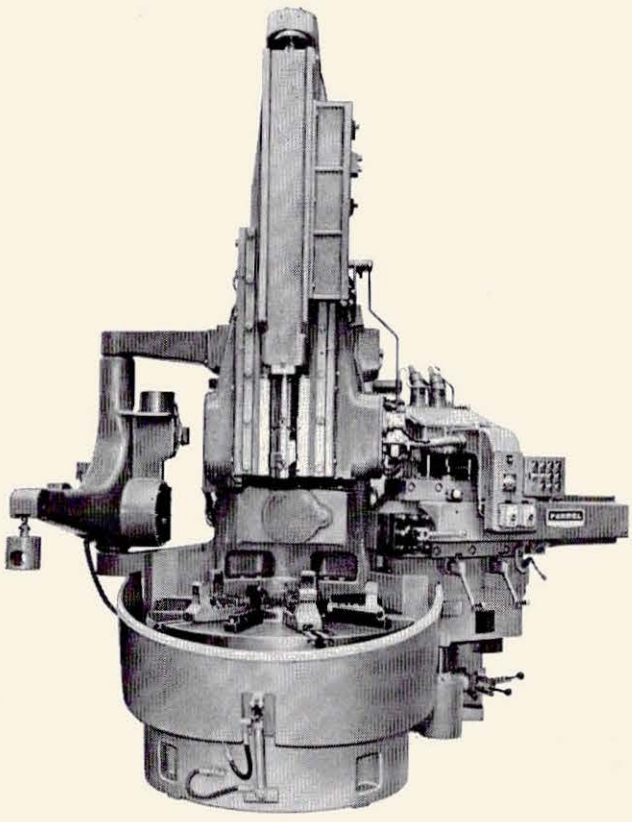
LORD

Circle 12 on coupon page 90



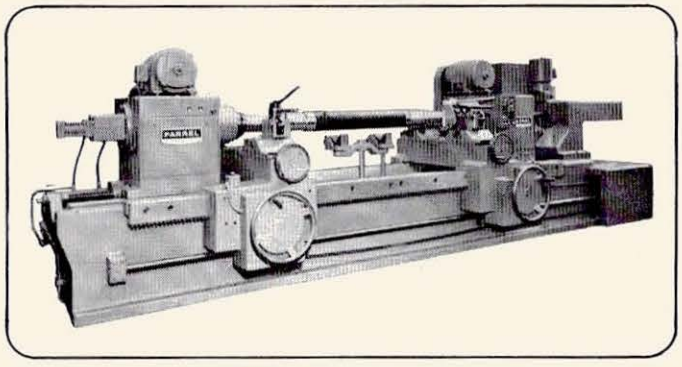
can reprofile at least two wheels in twenty minutes

Taking cuts up to 3/4" depth on both wheels simultaneously, this new 50" tracer-controlled wheel lathe is six times as fast as many old machines still in use. Operation is easy to learn. The design incorporates a straight-hydraulic tracing system requiring only four controls to cut the wheels.



performs 8 operations on diesel wheels

Farrel Diesel-wheel borers will rough-bore, finish-bore and chamfer in a continuous cycle . . . will face and turn both sides of the hub and face the flange side of the wheel rim . . . all with speed and accuracy. Wheels are automatically centered and chucked . . . boring is fully automatic from start to finish.



can turn and burnish at least 18 axles per shift

This dual-end drive journal-truing and axle lathe will (1) finish turn and burnish new or used, car or Diesel axles, (2) finish turn and burnish inside and outside journals of mounted wheel sets, and (3) turn center portion, between wheel seats, of straight axles. Speed range is suitable for carbide tooling.

productivity saves you money on wheel-and-axle maintenance

Farrel railroad shop equipment is designed to effect important savings in wheel-and-axle maintenance and manufacturing by raising productivity without adding to manpower needs. Look, for example, at the machines above.

Most of the Farrel line can be equipped with semiautomatic or fully automatic loading and unloading devices and with transfer and measuring systems. Each of the machines can be "sequenced" in operation with one or more of the others to improve accuracy and minimize further the manpower factor.

For more information about the Farrel complete line of wheel-and-axle machinery, send for bulletin 1400-A.

FARREL®

FARREL COMPANY
DIVISION OF
USM CORPORATION
RAILROAD EQUIPMENT SALES, DEPT. K1
565 Blossom Road, Rochester, New York 14610
Telephone: 288-4600 (Area Code 716)

FR-262

Circle 13 on coupon page 90

Circle 14 on coupon page 90

Send an operational Timken® "AP" bearing older than this, and receive a new one. Free!

Is this the oldest operational Timken® "AP" bearing in the world? We say no. And we're offering a new Timken "AP" bearing free* to anyone who comes up with one that's older.

To help in your search, here are some clues.

First, this is a Class E (6″ x 11″) "AP" bearing Number 29, assembled July 2, 1954 for Seaboard Coast Line.

Second, only another Timken "AP" bearing will be in service longer. The attempt to copy wasn't until 1958!

Finally, the bearing you're looking for is probably rolling around the country somewhere. Just as it has for over 15 years.

For years we've been telling you Timken "AP" bearings last longer. Now here's your chance to prove it. And receive a new "AP" bearing for your effort. Free.

The Timken Roller Bearing Company, Canton, Ohio. Timken bearings sold in 133 countries. Manufacturing in Australia, Brazil, Canada, England, France, South Africa and the U.S.A.

*One to a customer, please.

TIMKEN®

REGISTERED TRADEMARK

TAPERED ROLLER BEARINGS

Over the years we have consistently upped the quality, efficiency and safety features built into International Caboose Cars.

Coincidentally, the higher we boosted our quality standards the lower operating costs went.

The result to date? International Caboose Cars are in service on 90% of America's trunk line railroads.

They're enjoying the economy of quality.

Isn't that what it's all about anyway?

International Car Co.

835 Englewood Ave./Buffalo, New York 14223
Representatives: M. H. Frank — Cleveland, O. • Prest Company — St. Paul, Minn. • R. B. Hornberger — San Francisco, Cal. • F. E. Ross, Jr. — St. Louis, Mo. • E. J. Hasten, Jr., W. B. Reed — Chicago, Ill.
A Part of NATIONAL INDUSTRIES, INC.

MEMBER RPI

Circle 30 on coupon page 90

Supreme Court upholds train-off orders

The Supreme Court last week upheld ICC approvals of passenger-train discontinuances involving the Burlington and the Erie Lackawanna. The Burlington case involved the abrupt halt of trains in midtrip last Aug. 14, when the railroad learned that a federal district court had upheld the ICC's Jan. 13 approval of a petition to discontinue trains between Omaha and Billings, Mont. The case attracted wide publicity because (1) a U.S. Congressman was left waiting up the line from the stoppage point, and (2) the Justice Department filed suit against the railroad for the discontinuance tactic. The suit is pending and was not affected by last week's Supreme Court order.

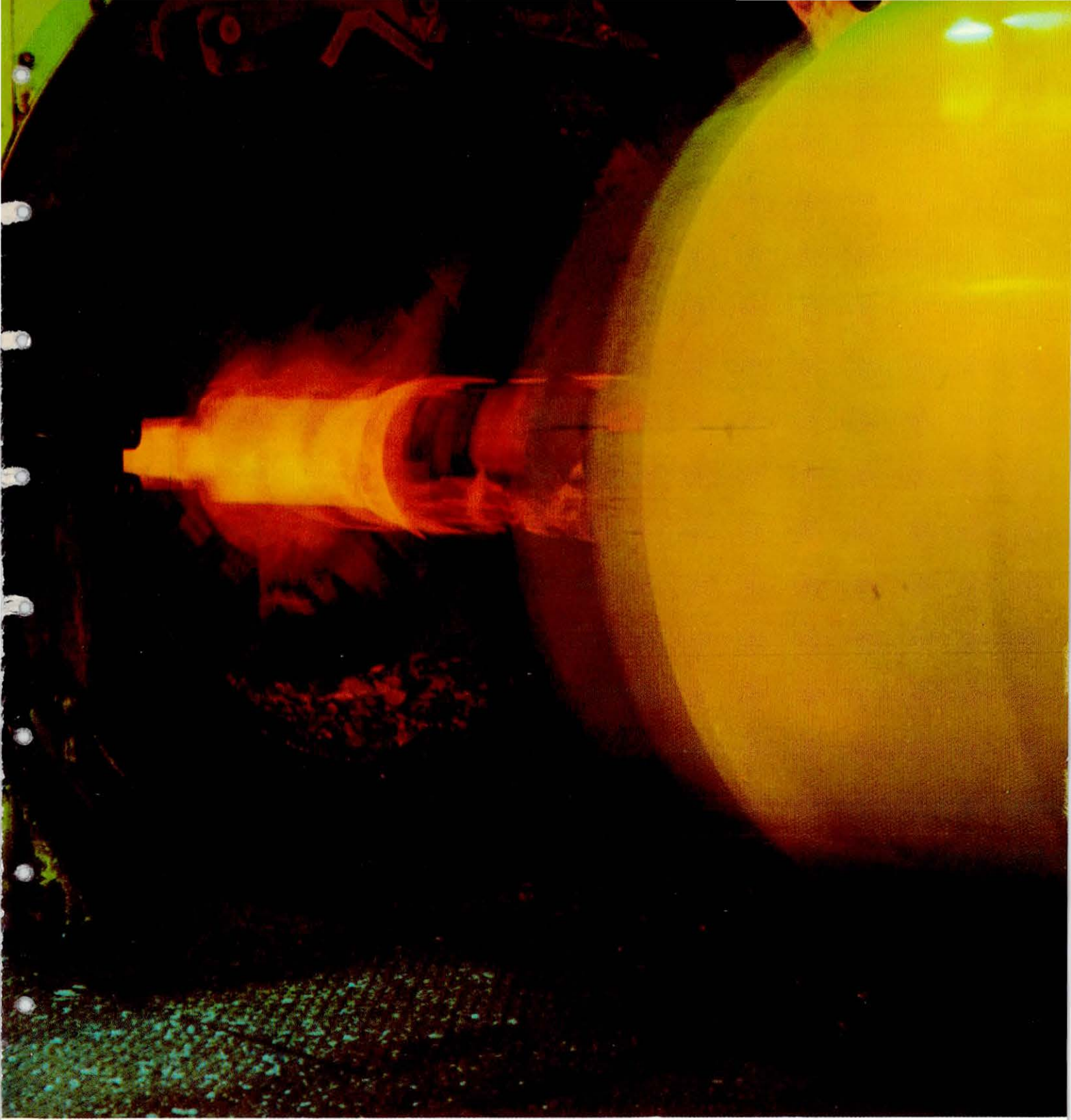
EL cases upheld involved trains between Chicago and Hoboken (the "Phoebe Snow"), and between New York City and Binghamton, N.Y.

PC ordered: restore interchange service

The ICC has ordered Penn Central to restore the schedules and service that prevailed before the New Haven inclusion at Maybrook, N.Y., an interchange point with Erie Lackawanna. However, ICC denied Erie's request for $4.3 million in damages. Erie had charged that PC downgrading of operations at Maybrook was ruining EL east-west through traffic (RA, Oct. 27, 1969 p. 38). ICC said: "What the defendant (PC) has done, and we so find, is to increase the time in transit for traffic moving over Maybrook . . . and to adversely affect the standards of service on the Maybrook route. . . ."

Airbus wing cars off and running

Last week two of the biggest railroad cars ever built were on a dry-run from Nashville to the West Coast, testing routes over which Avco-supplied wings for Lockheed's Tristar airbus will soon be moving (RA, Jan. 5/12, p. 11). Southern Iron & Equipment built the cars, which stretch out for 108 feet and boast a volume of almost 14,500 cubic feet. Westbound, the cars were being routed via Louisville & Nashville-Cotton Belt-Southern Pacific. They'll be returned to Nashville via SP, Santa Fe, Rock Island and L&N.



NEW AUTOMATIC AFM FACILITY FORGES "HARD CORE" AXLES

Standard's new, fully integrated car and locomotive axle shop represents an investment of over $5 million.

To produce the highest quality axles possible, it includes new automated heat treating and machining facilities as well as the GFM numerically controlled forging process. The axle is forged between four eccentrically driven hammers, each capable of exerting 882 tons of pressure, striking the workpiece at 265 blows per minute, while two automated manipulators handle the axle.

The axle is heat treated in modern automatic furnaces, machined on the newest type Snyder semi-automatic tracer lathes and then sonic inspected when required.

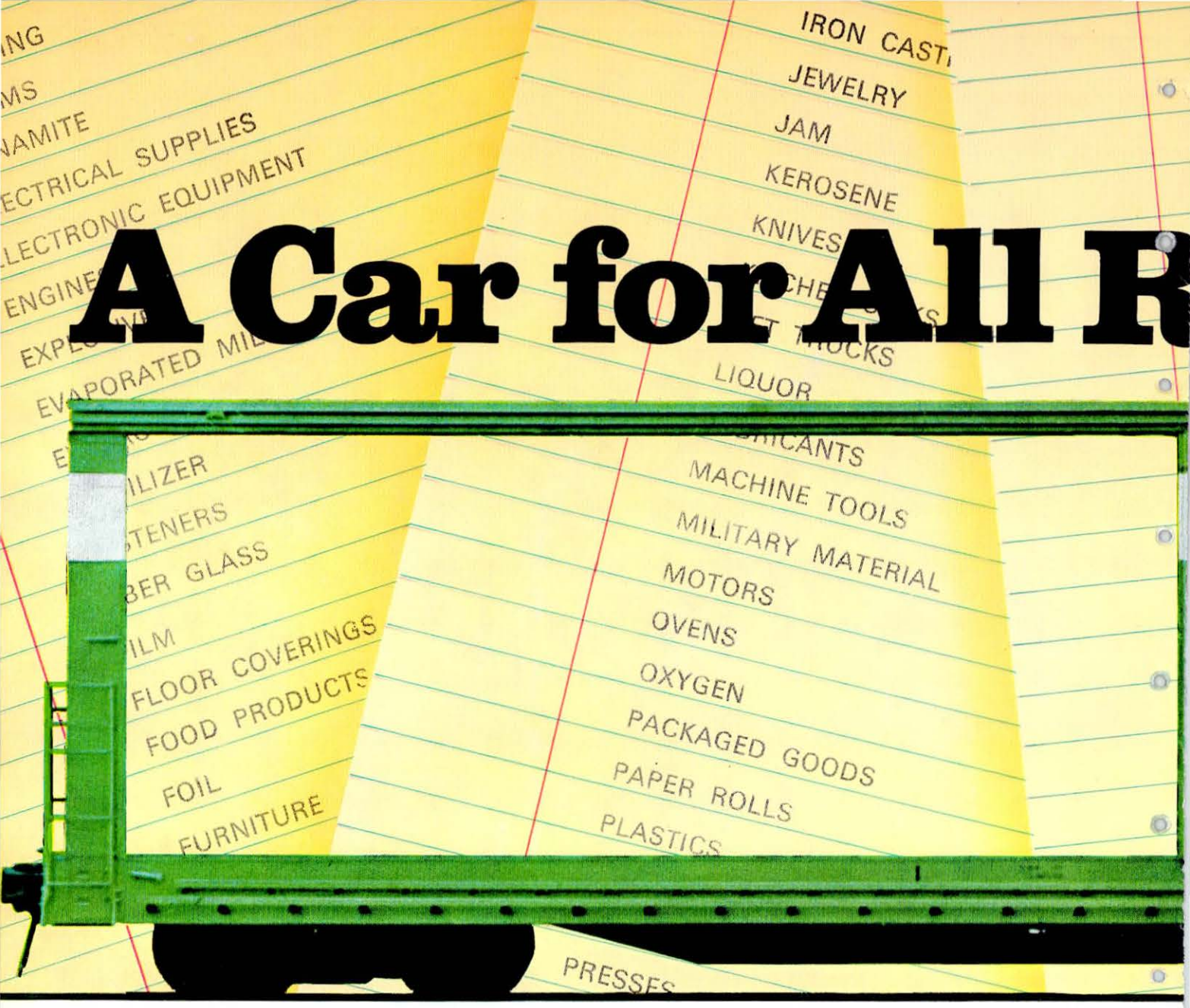
THE RESULT: The birth of hard core, high-quality car and locomotive axles.

Why not re-evaluate your axle requirements and standardize with Standard Steel Division, Burnham, Pa. 17009.

BALDWIN·LIMA·HAMILTON
A subsidiary of Armour and Company ®

BLH
STANDARD STEEL

A Car for All R



A practical successor to the all-purpos

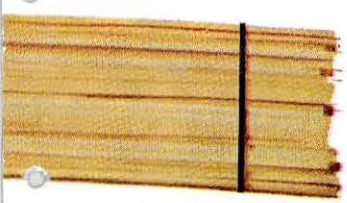
MEMBER RPI

HARDWARE
HABERDASHERY
HEATING EQUIPMENT
HOUSEHOLD APPLIANCES
INCINERATORS
LEATHER
PANELING
REFRIGERAT
RUBBER GOO
RUGS
SCREENING
SHOES
SILVERWARE
SOUP

easons:

U. S. Patents Pending

e boxcar has arrived.



The idea of a "standard boxcar" is a great one . . . providing the car is acceptable to the shipper.

But over the past 20 years, the "standard boxcars" gradually became obsolete. Not the idea . . . but the car itself.

Why hasn't someone built a new "standard boxcar". . . an all-purpose car . . . one that most of today's shippers will want?

We did.

A number of these new Thrall-Door cars are in service right now. Who'll be next?

THRALL CAR
CHICAGO HEIGHTS, ILLINOIS 60411

New ideas are the Stanray way of doing things

New X-panel roof provides greater strength under stress!

Twisting and racking are two of the greatest stresses a roof on a railroad car is subject to. The X-Panel Roof's strength lies in resisting these common stresses, due to the X corrugation configuration. Standard's new roof has panels 61½" wide instead of the normal 41", which results in approximately 33% fewer seam caps. It also means less chance of leakage. Install by welding or riveting (your option). ■ Why not contact your Standard Railway Equipment representative and ask about the new roof that provides greater strength under stress.

STANDARD RAILWAY EQUIPMENT
division of STANRAY CORPORATION
Hammond, Indiana • Chicago

1970 OUTLOOK

Spending: A warming trend?

Some of last year's gloom remains—but most indicators point to a substantial rise in capital spending, with the total railway market in the respectable neighborhood of $4 billion.

These are the times that stretch men's faces—when a man's deep involvement with business and the economy is measured by his long face and his dour expression.

Pessimism is fashionable. It may also be reasonable. But it's not necessarily a 100% accurate barometer for measuring the changing times.

● **A year of problems.** For much of 1969, the railroad and allied industries were in the grip of fear. They were being battered by inflation, tight money, high interest rates. They were kept hanging, right up to the end of the year, as the Administration and Congress battled over vital tax policies. They worried about rising labor costs, and the certainty that labor's demands for 1970 would be many. Despite the dangers involved, they were forced to go for price increases. They were stymied, often as not, in efforts to get out from under loss-creating operations —especially in the passenger-service area. And once again, they were "studied" near to death.

But what kind of year did '69 really turn out to be? What kind of year *can* '70 be?

● **One view of '69.** One observer sums up the past year with this: "It turned out better than we had any reason to expect—better, in fact, than we could realize at the time it was happening." And how about 1970? "Well, the basic problems are still there, make no mistake about that. I think we have to outdo ourselves in trying to find positive ways of handling the problems—without giving up and talking ourselves into the doldrums."

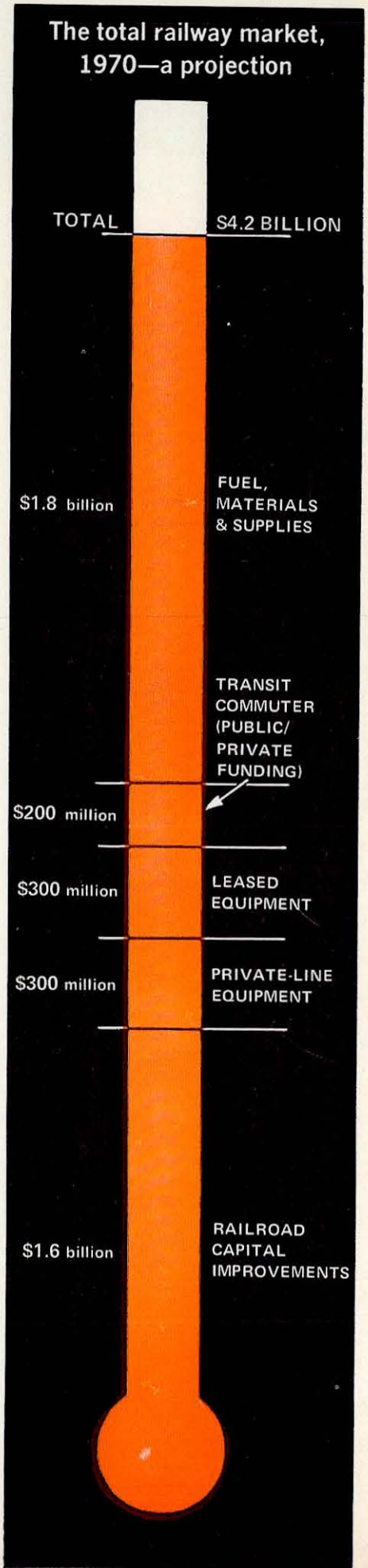
There is this to be said for 1969: Despite uncertainties involving rates, revenues, taxes and the availability of money, railroads were able to make improvements to the tune of about $1.4 billion. Investments in leased and privately-owned equipment brought the expenditures total close to $2 billion. Motive power orders held up well, and in the freight-car market 1969 was an 80,000-unit year. Only in the area of fixed-property improvements did '69 fall somewhat short of year-ago hopes.

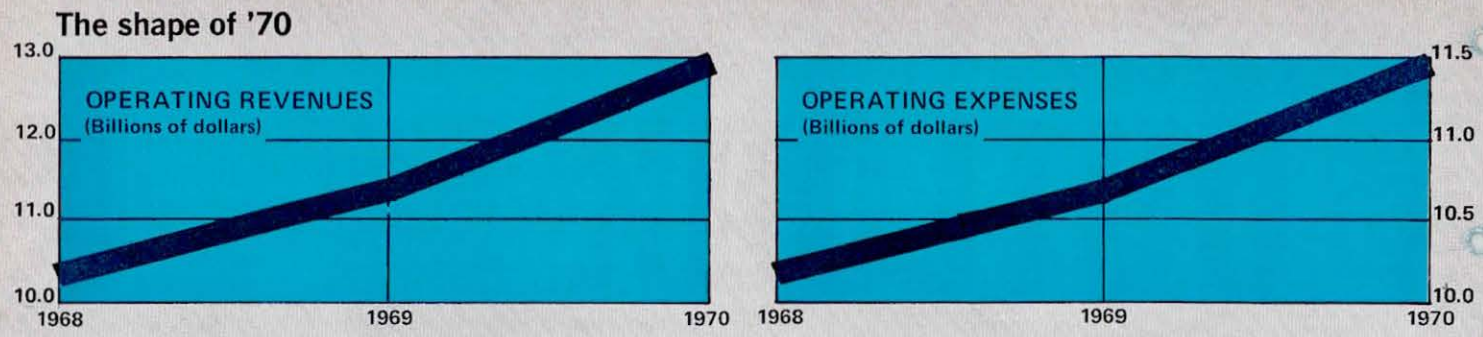
● **Financial measures change.** Revenues during 1969 were up, reflecting rate increases and a slightly higher level of business. Operating expenses were also up, reflecting higher prices for material and supplies and wage/benefit increases. Net operating income and rate of return edged up; so did net ordinary income—though none of these measures gained enough to produce anything more than faint cheers.

The new year, so far as it can be judged at this point, *should* be another year of positive movement. Like 1969, '70 will be a year for treating the railroad industry's symptoms rather than the causes of its ailments. But there should be gains.

There is a good chance, for instance, that investment in equipment and property improvements will be increased. At least one survey now points to a 7% spending boost—and this, added to a possible further pickup in second-half 1970, could put total industry expenditures at or near the $1.6-billion mark.

● **The emphasis on equipment.** Railroads aren't talking this way, at





this point. But several things have to be taken into consideration. One is the continuing pressure for more motive power and more freight-carrying equipment (in addition to the pressures for improved utilization of both locomotives and cars). A second factor, perhaps relatively minor over-all, may be the enforced retirement of the oldest cars in the freight-car fleet—those 50 or more years old. And still another element, no doubt, will be the effects of various provisions of the tax reform act of 1969—including those provisions granting fast write-off only in the case of railroad-owned or -leased equipment.

In the fixed-property area, some observers see a good chance that the increased activity expected last year will actually come during 1970. Preliminary estimates indicate that rail and tie installations will be up significantly—though it's reported at the same time that virtually the total amount of the increases can be accounted for by the stepped-up programs of just a few roads.

● **Records ahead?** One thing seems for-sure: Transportation demand will be increasing, and railroads will probably be setting new ton-mile records just as they did in 1968 and '69. Final figures for last year show a 3.1% ton-mile increase, from 744 billion in 1968 to 767.2 billion in '69. Carloadings increased by 0.1%. And the forecasts of the regional shippers advisory boards call for 1970 to get off to a fast start—with gains of 2.5% in carloadings and 4% in ton-miles for the first quarter *(See page 13).*

Not everybody agrees, however, on what form 1970 will finally take. Northern Pacific President Louis W. Menk, for instance, argues that the industry's volume of business "is not likely to improve in the first half . . . . As I see the general situation, it's difficult to predict any significant lift in the nation's general economy in the first half. It's reasonable to assume that the Nixon Administration will extend its efforts to dampen the fires of inflation. Certainly, this needs to be done. Such efforts will achieve some success, no doubt. But the firm containment of inflation is going to be a gradual and somewhat unpleasant process."

● **The fight continues.** Predictably, the industry's battle to contain its own brand of inflation will be getting primary attention. As Menk puts it, "If over-all production is kept under restraint through efforts to cool the economy, railroad traffic volume could remain about level rather than increase. Costs of providing transport service will continue to climb. With the volume of business lagging behind climbing costs, our financial problems will be compounded."

The general rate increase which became effective last Nov. 18 will be of some help in the chase between revenues and expenses. But there are problems involved in getting intrastate rates increased, and the industry isn't yet benefiting as it might from all proposed rate boosts.

Then, too, it has been said often enough by top people in the industry that still further general increases will be needed—probably sooner rather than later.

● **Experts don't agree.** If you try to gauge 1970 by what the economics experts are saying, you come up slightly confused. There is, perhaps, a consensus—but it's a cautious one which gives and takes away at the same time.

On inflation, for example, the economists seem to be saying that it's going to let up slightly—but it will still be a major problem.

On the chances for a recession, the judgment seems to be that the nation will be spared—but that there won't be much real business growth either, at least during the first half of the year.

And on the outlook for the year as a whole, the figuring is that there will indeed be a second-half pickup—but it may not amount to much.

Several other threads ought to be woven into the economic fabric—and among the most important is the somewhat tangled thread of management/labor affairs. Here, too, there are contradictions.

● **A tough year.** Most observers regard '70 as a tough year for bargaining. Contracts are up for renegotiation in a number of key industries. On the one hand, consumer price indices are rising and these increases may tend to set a floor—a rather high floor—for this year's settlements. On the other hand, many economists are looking for an increase in unemployment—and historically, this produces a certain softening of demands. With these opposing forces at work, organized labor itself could be in for a wrenching time, as the leadership and the rank-and-file sometimes pull in different directions.

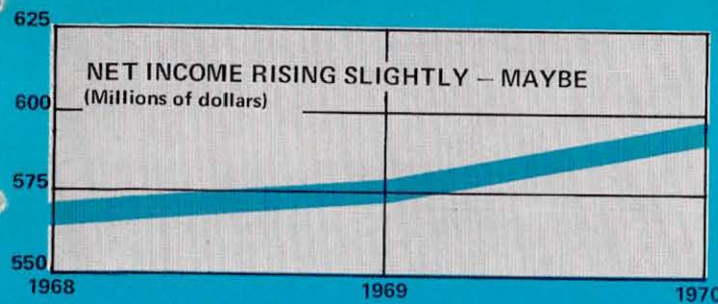
For the railroad industry, there's the possibility of double-trouble in this: Railroads have their own union settlements to worry about; they may also have traffic/revenue problems growing out of labor problems in key traffic-producing industries.

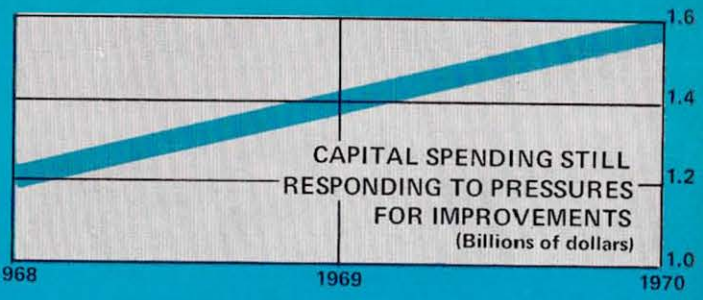
(Railroads aren't alone, in facing up to this squeeze. The trucking industry is due to be hit, and hard, by Teamster demands. And, by some measurements, the truckers are in a bind already. Reports on carriers subject to ICC regulation indicate that their revenues gained by about 8% last year, to a peak of $133 billion. At the same time, profits dropped sharply, from $276 million in 1968 to about $240 million in '69.)

What kind of action will railroads be taking to protect themselves—insofar as possible—in a time of rising costs and, for the long-range, economic uncertainty? Railroads will be doing all they can—and hoping it's enough.

● **Cost fight continues.** There will be a continuing drive to trim costs. Labor, which still takes out more than 50 cents of every revenue dollar, will be a major target. But with each passing year, labor-cost-saving opportunities become harder to find. Technological improvements still offer promise of helping the industry get the job done with less manpower or better-utilized manpower. But there is a constant battle here between cost-conscious management and labor organizations armed with existing agreements and dug in behind their own theories of employment stabilization.

Government will also be involved, again, in railroad cost-management problems. For one thing, there's the problem of rail passenger service to be solved. The ICC has come under in-





creasing criticism as it shows increasing reluctance to permit discontinuance of money-losing trains. Several deficit-producing trains have been before the Commission two and three times, as their financial condition gets steadily worse. But the ICC holds back, and one result is that Congress has a number of proposals to consider—only one of which is the AAR-backed proposal for government aid to deficit operations which are still deemed essential.

● **Government's other roles.** Government also figures in its continued handling of the railroad merger movement—a "movement" in which there hasn't been much in recent months. Burlington Northern should come to a decision soon (via the Supreme Court). But other major merger cases remain a long way from a final resolution—including Chesapeake & Ohio/Norfolk & Western and Illinois Central/Gulf, Mobile & Ohio and Chicago & North Western/Milwaukee and the biggest one of all (in terms of participants and controversy generated), the Rock Island case.

Government action and railroad costs go hand-in-hand in other areas, too. At some point in 1970, there will probably be a clarification of the whole safety picture—and of what may or may not be required of railroads. One labor-related measure, involving changes in the hours-of-service law, got through Congress late last year—but a second major issue, involving supplemental pensions, remains to be settled (and on this one, rail management may be caught between two warring factions in labor).

● **Costs—and revenues.** If you look at the cost situation coldly, you come to the conclusion that the industry's ability to cut—or even to hold the line—is severely limited.

If this is true, then major emphasis has to go to increasing revenues.

It may be significant that a number of top railroad people are unwilling to forecast revenues on any basis other than that provided by the application of past rate increases to a stable traffic base.

The unfortunate part of this is that the resulting gross revenues won't be enough. Past rate boosts were designed essentially to cover cost increases after-the-fact. Further price increases and additional labor-cost increases will make new revenue increases necessary—and there are really only two ways to increase revenues: (1) Go to the ICC again for permission to raise prices, and (2) build up the traffic base by getting more of existing markets and exploring new ones.

There are obvious problems connected with the first possible course of action. From a philosophic standpoint, there is perhaps an embarrassment factor—as an industry campaigns to polish its image as a keeper-downer of consumer prices at the same time it makes repeated trips to Washington for rate increases. More valid from an economic standpoint is the cause-and-effect factor—since a regulatory body will be reluctant to grant rate boosts in the absence of provable (and, therefore, already incurred) cost increases.

● **How about the market?** The second course of action—building the traffic base—also runs into problems. Conditions existing today—the anti-inflation fight, and labor troubles almost everywhere—make it unlikely that railroads can meet their revenue needs by concentrating solely on getting more business from customers they now serve.

Inevitably, market researchers will have to come up with new market-penetration efforts. Railroads will have to start probing into markets they never had, or markets they've lost to competing carriers since World War II. Inevitably, this will bring on new intermodal conflicts. It could bring a new push for rate deregulation, for a government transportation policy that lets open competition play a bigger part in determining who gets what business. For the long run, this may not be the absolute best course. But it might work best both for transportation and for the transportation buyer until such time as government sees fit to permit the development of true multimodal transportation agencies.

● **Always, a need for service.** Any way the railroad industry cuts it, however, it has to maintain its service capability—maintain it and improve it. Labor agreements that act to prevent service experimentation will have to be renegotiated. Inter-road service problems will have to be wiped away. Railroads will have to maintain and improve motive-power and equipment availability—which means development of improved power and car utilization and which may mean an absolute increase in power and equipment fleets.

As railroads (and the rest of the business community) head into 1970, there seems to be a tendency almost to play things day-by-day. The "experts" have thrown enough alternatives into the air to make virtually any decision suspect—to provide reason for postponing decisions "until things get a bit clearer."

Past experience would seem to indicate that things rarely get "clearer." For every problem solved, another takes its place. Past experience would also seem to indicate—to some degree, at least—that the time to act is at precisely the time when everybody else is holding off because things are "unclear."

● **1970: Conservative year?** If a guess had to be made regarding 1970, it would be this: Those who play it conservatively will wind up with conservative results; and in a year when most people seem inclined to go the conservative route, the gambler could find the pickings good.

For railroads, this translates into several possible courses of action:

—There can be a continuing effort to improve the quality of service provided. Speed and low cost will win some business, but in the long run the votes that count go to the carrier who proves his reliability.

—There can be a persistent effort to open up new markets which, under the proper service conditions, can be more than adequately served by rail.

—There can be a determined effort to keep railroad equipment and plant in shape to handle growth of business.

And after it's over, on Dec. 31, 1970, perhaps railroad people will find something to recall fondly about 1970: Not a vintage year, but not all that bad either. ■

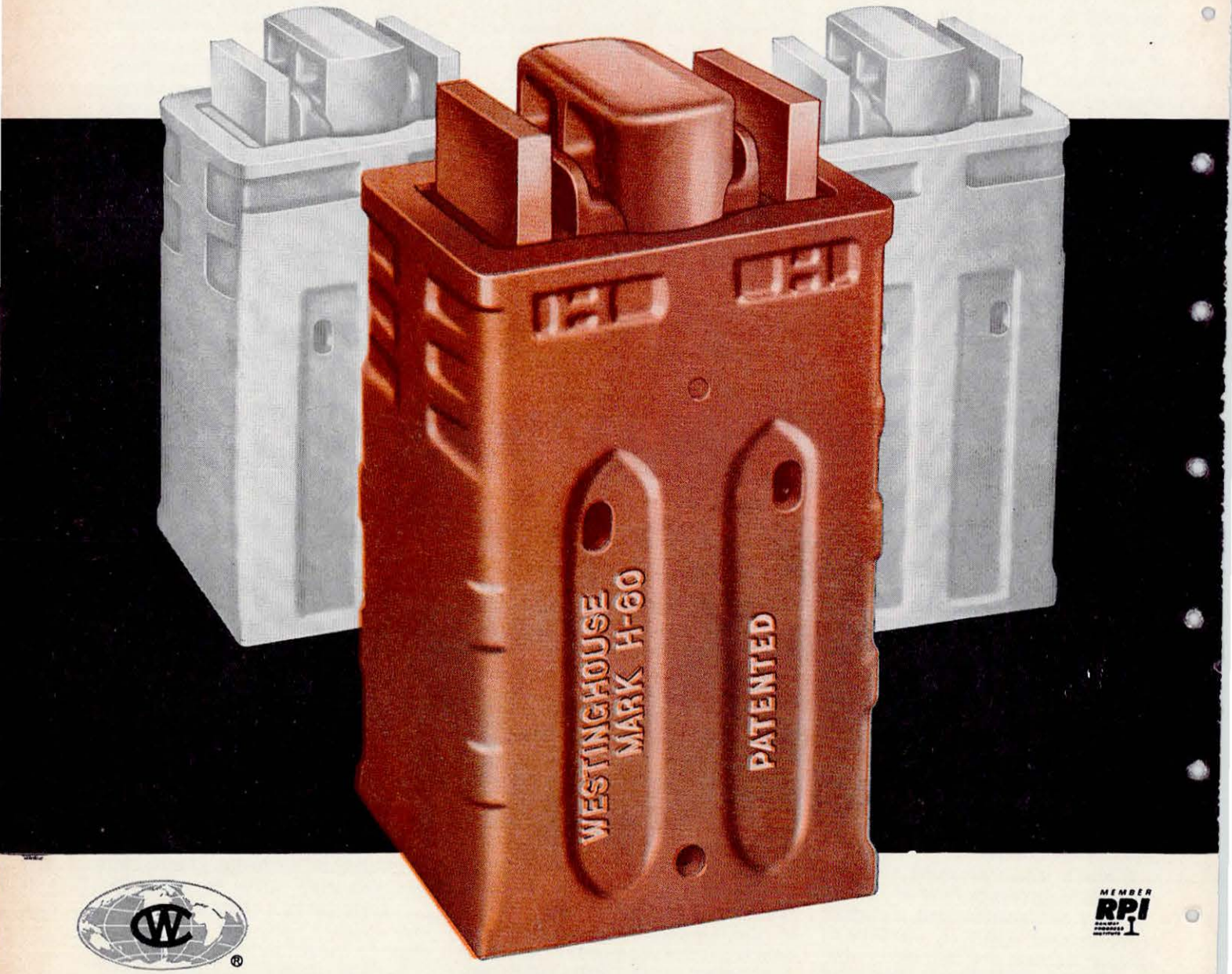
MARK H-60

THE 2-IN-1 GEAR

Six years ago—a challenge—How can one gear be made to do the work of two without an increase in size or travel? In two years, Cardwell Westinghouse Research and Development had the answer—the Mark H-60.

The H-60 has the equivalent energy absorbing capacity of *two* Mark 50 gears. This remarkable achievement in the science of draft gear engineering is accomplished by the addition of a hydraulic booster unit to the normal spring complement. The powerful hydraulic unit supplements the spring resistance to produce the multiplication of total draft gear capacity.

During the four-year period of varying service conditions, the H-60 established a dependable record along with its predecessors—the Mark 50 and Mark R-500. Will meet A.A.R. Specification M-901G. Applicable to all classes of cars with 24⅝ inch pockets. Tomorrow's draft gear is here today—Consider the H-60 as a must for cars 100-ton and over!



MEMBER RPI

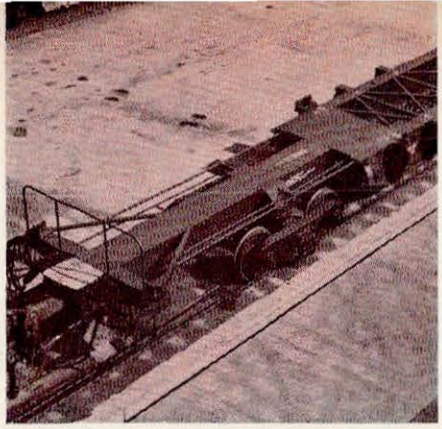
CARDWELL WESTINGHOUSE COMPANY

332 SOUTH MICHIGAN AVENUE, CHICAGO, ILLINOIS 60604 • TELEPHONE 312-427-5051

INTERNATIONAL DIVISION SAME ADDRESS

CANADIAN CARDWELL COMPANY LTD., 1875-46th AVENUE, LACHINE 620, QUEBEC • TELEPHONE 514-636-4864

Circle 18 on coupon page 90



70,000 cars in '70 . . . plus 1,300 locomotives

Tax revisions hold promise of strong equipment market.

By F. N. HOUSER, Mechanical Editor

How about a slogan for the first year of the new decade? How about 70,000 cars in '70? That prediction for freight car orders is somewhat more optimistic than the one recently published by the American Railway Car Institute. But then things have happened since ARCI's Marketing Forecast Committee looked into its crystal ball. Most significant was final action on the Tax Reform Act of 1969 which allows rapid amortization of rolling stock. There are also new favorable provisions which would spark the rebuilding of cars.

While locomotives are not covered by the new legislation, the need for motive power seems to be so pressing that as many as 1,300 units could be ordered this year by U.S. railroads. Industrial and foreign orders will account for several hundred more.

All this indicates that railroads will probably be spending up to $1.25 billion on new cars and locomotives in 1970. In addition, private operators will spend upwards of $600 million on their car fleets and leasing this year.

● **Where do we go?** The opening of the decade of the '70s is a good time for some retrospection and introspection. What has this industry been doing? And what should it now be doing with respect to its equipment fleet?

All too frequently railroads and railway suppliers cite "the good old days." It would be beyond the memory of most of those active in this industry today to find a time when freight cars were built at a rate appreciably higher than during the 1960s (see accompanying chart). Taken a decade at a time, the carbuilding market has been remarkably consistent for 30 years. During the 1940s, 640,219 cars were delivered by carbuilders and railroad shops. In the 1950s the figure was 619,328. In the decade just finished the total was about 615,000.

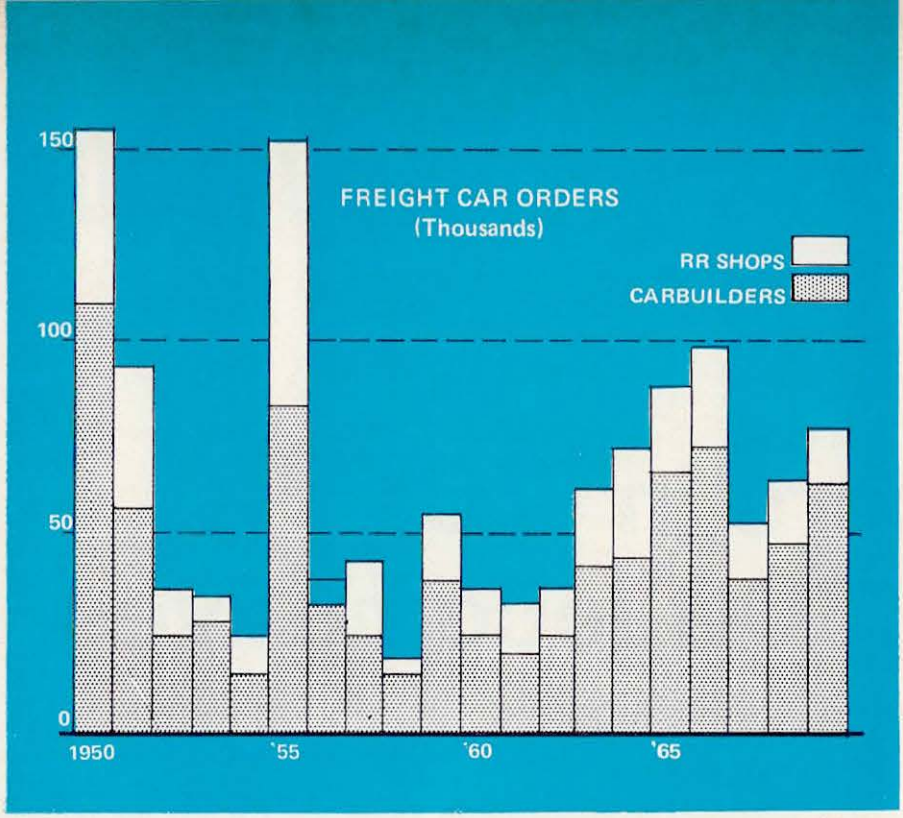
● **Stable and consistent?** While there is consistency in decade-long segments, frequent complaints are made about the lack of stability in carbuilding on a year-to-year basis. Actually, the 1960s come off better than the two previous ten-year intervals. In just two years (1950 and 1955) orders were placed for over half of all the cars ordered in the 1950s. In the 1940s half of the total car orders were placed in just three years. In took the four best years of the 1960s (1964, 1965, 1966 and 1969) to account for half of the market.

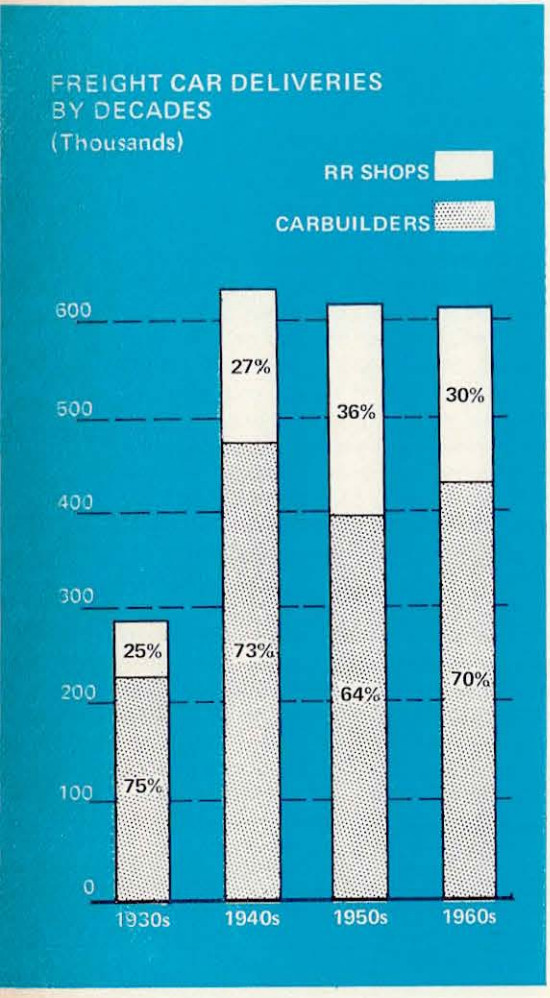
Of course, today's marketplace is a different one. The high cost of standby facilities has been pointed up in recent years as several carbuilders abandoned shops, in some cases giving up completely on the construction of general-service rolling stock. Just last year Alco Products took a similar step, ceasing locomotive production and transferring its designs and some personnel to associated MLW/Worthington in Canada. Railroads have long since abandoned the building of their own motive power and in the 1960s this same philosophy gained some strength in the car field. This trend was apparent as the proportion of new freight cars built in commercial shops climbed from 64% of the total in the 1950s to 73% of the total in the decade just past. On a unit basis, carbuilders built 10% more cars in the decade of the '60s than in the previous ten years.

● **The differences.** And the cars which are being built differ considerably —and promise to be more specialized and complex as the decade proceeds. Size and cost have gone up consistently. A majority of cars built today are of 100-ton capacity. Ten years ago it was 70 tons and 20 years ago, 50 tons. Rising costs reflect more than simple price inflation. What is primarily responsible is the greater capacity, along with widespread use of cushioning, load restraining devices, improved trucks and more substantial construction. The average new American freight car which had cost $4,594 in 1949 was $10,319 in 1959 and, according to ARCI President Walter Renz, $17,000 last year.

Motive power demands demonstrate a similar escalation. From 1959 when locomotive units in the 1700- to 2000-horsepower range were the most popular, service demands have intensified until today the 3300- and 3600-hp units predominate in new road power. This two-for-one growth on an individual unit basis has been accompanied by an increase of over 25% in total road fleet horsepower in the decade. It has been estimated that this fleet power will have to go up 50% by 1975 to maintain present train schedules, allowing nothing for their improvement.

Most railroads have replaced mainline motive power initially, almost inevitably choosing high power units. As explained by a motive power officer of a major railroad, the next step normally is the acquisition of second-generation secondary power, often to replace the





1500-hp units which were the first-generation road locomotives. The differences in demands between today's mainline and secondary services are so distinct that from now on there probably will be a more comprehensive mix of new locomotives required for the replacement market.

● **A big market.** O. F. Vea, general manager of General Electric's Locomotive Department, reports that in 1969 domestic railroads for the second consecutive year installed more than two million horsepower. Their 1969 orders called for an additional 2½ million horsepower with total number of units topping 1800. "Although this level of orders represents an increase over the 1968 level," observes Vea, "there are still approximately 6000 units in service (33% of the total domestic fleet) which are over 15 years of age. This would indicate the need for continued locomotive purchases in the area of 1800 to 1900 units annually."

While the past half dozen years have seen the unit horsepower demand go up from 2000 to 3600, Vea observes that for the present there is emphasis on the medium size units in the 2300-hp range for powering branch-line services and smaller, slower mainline trains. Last year also witnessed continued emphasis on reliability and safety.

"Though diesel engines in the 4000- and 4200-hp range have proven feasible," continued Vea, "it is recognized that the technical advances involved need careful evaluation and experience in terms of the size, weight, engine and speed parameters for domestic railroad service." He calls the dual-engine, high horsepower units introduced last year a significant factor in improved reliability because of their completely independent power systems. Features of such locomotives include on-board load testing equipment and simplified propulsion circuitry with no transition or field shunting, thus eliminating all power contactors.

● **A look ahead.** D. S. Neuhart, Union Pacific's general superintendent motive power and machinery, has led the drive for high horsepower which resulted in the 5000-hp and 6600-hp units which UP ordered in 1969. He has observed that in planning future cars and locomotives it is necessary "to design out as much maintenance as possible . . . no railroad can successfully operate tomorrow with the accepted standards of today."

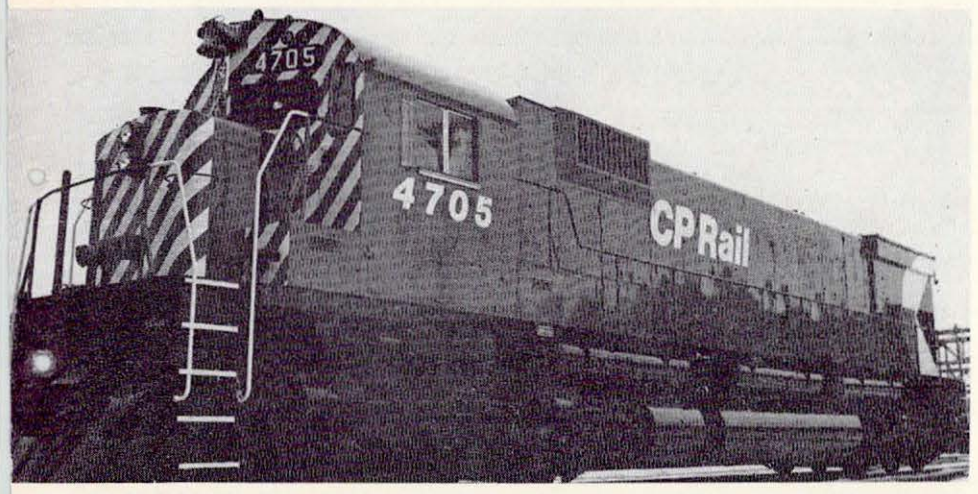
In designing future locomotives, the UP looks to some way to utilize heat now being lost through the stack. Ultimately the road seeks a locomotive with engine, alternator and traction motor capacity to provide 1000 horsepower per motor and 8000 horsepower per unit at the rail. "We feel this can be accomplished in the near future with the cooperation of locomotive builders," Neuhart predicts. Southern also aspires to reduced maintenance requirements. Ultimately that road's motive power officers hope to purchase a locomotive, change the power assemblies in the diesel engine twice, and trade the unit in after 15 years of service, never having removed either the engine or main generator. Power assemblies, traction motors and wheels would be regarded as the major consumable items in such a maintenance concept.

● **Time to electrify?** Southern Pacific President Benjamin F. Biaggini has recently warned that "we must not try to spend excessive time in warming over old ideas when we should be moving ahead with our best thinking on new concepts for future railroads. It is time to be looking at all kinds of advanced power systems—linear induction motors, air-cushion vehicles, magnetic suspension, fuel cells and electrification —either from conventional or nuclear power plants."

Already Southern Pacific has studied electrification of its Colton, Cal., to Yuma, Ariz., mainline in cooperation with Southern California Edison. UP has made a similar investigation of its heavy-traffic line from North Platte, Neb., to Green River, Wyo. UP Vive President John C. Kenefick has observed that electrification holds great promise for the future because of the high speeds and controls which will be necessary. Kenefick confirms Biaggini's belief that the "linear motors appear to

HIGH HORSEPOWER has been made available to UP with record setting DD40X units from Electro-Motive. Pair of 16-cylinder engines produce output of 6600 hp.

MEDIUM POWER units are proving popular as railroads replace secondary mainline and branch units. General Electric delivered 2300-hp units to Burlington.



UNIT REDUCTION is made possible as high power models let Canadian Pacific replace three or four units with two M-636s, built by MLW/Worthington.

hold great promise inasmuch as they allow much of the weight of the motor to be deposited on the right-of-way with the balance of the power requirements being in the power unit."

A recent investigation undertaken for U.S. Department of Transportation by Westinghouse Electric concludes that "high-speed trains could be powered by either a-c or d-c conventional motors or linear induction motors, with modern solid-state thyristor controls to apply power." GE has been making a simultaneous study for DOT on electric power collection.

● **America's test tube.** In 1969 the first example of high-voltage alternating-current electrification in North America went into service with completion of Ohio's 15-mile Muskingum Electric Railroad (RA, June 9/16, 1969, p. 16). Locomotives, controls to achieve complete automation, and the power supply equipment were provided by GE.

GE's Vea notes that high-horsepower-per-unit requirements and the demands for increased reliability and reduced maintenance, all inherent in electric locomotives, have created new interest in railroad electrification. "The economic feasibility of mainline electrification is becoming increasingly attractive as higher traffic densities develop under the progressive new mission envisioned by American railroads, to meet the improved service and higher traffic loads which follow," explains Vea. The economic feasibility of electrification also "is enhanced by the new, progressive attitude of interested electric utilities."

One electrification expert has observed that while their attitudes are gradually changing, American railroads are still basically tractive-effort oriented, in contrast with Europe where horsepower gets the emphasis. Where drag service predominates, he says, electrics are not markedly superior to diesels, except possibly from a maintenance standpoint.

● **The first 4000.** The drive for high horsepower has also moved north of the border, though it so far is strictly in terms of diesel electrics. Canadian Pacific recently began to take delivery of the first 44 of MLW/Worthington's new 3600-hp M-636 locomotives, the largest units so far produced in Canada. While these diesels are powered with an Alco-style 16-cylinder Model 251 engine, MLW-W will soon build an experimental 4000-hp unit for CP Rail powered by a new 18-cylinder engine. This will be the largest single-engine locomotive ever to be built.

S. M. Gossage, CP vice president, recently pointed out that two of the

BY 1975 FREIGHT SHOULD BE UP 42% OVER 1969's RECORD

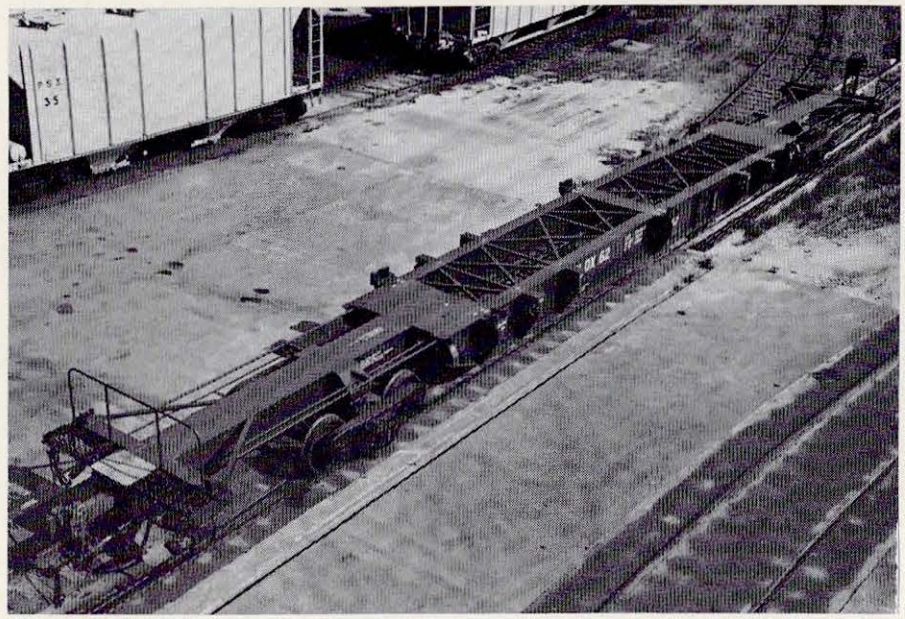
new 3600-hp units "will do the same job with greater reliability and less maintenance than three or four locomotives with lower horsepower." Henry Valle, president of MLW-W, says that his firm's new generation of locomotives —the "M" line, incorporates the latest technology and are available in sizes ranging from 2000 to 4000 horsepower. CP Rail is getting 29 of the M-630 3000-hp units for its British Columbia unit coal train operation, scheduled to start in April (RA, Nov. 3, 1969, p. 17). Canadian National will soon get 20 of the M-636s. In developing the new models, the president of MLW-W has paid tribute to the "enthusiastic cooperation of CP Rail—especially the mechanical department—for their suggestions and guidance on the many improvements and innovations."

A continued high volume of diesel locomotive production in 1970 for American and overseas markets has been forecast by B. B. Brownell, vice president and general manager of General Motors' Electro-Motive Division. "Total EMD sales for 1969 exceeded 1968 by 18% with locomotive unit deliveries to U.S. and overseas customers running 32% ahead of 1968," he reports. "We expect this relatively high volume to continue, although we recognize that the current tight money market and high interest rates, in which railroads compete with short-term borrowers, could adversely affect locomotive purchases."

EMD's optimism has been backed with a major expansion of its plant and a general rearranging of production facilities scheduled to be completed next year. "A major portion of our expansion and rehabilitation program relates to customer service," he explains. "Personnel for field service was increased by more than 60% in 1969."

The rosy outlook for the locomotive business in the year ahead, says Brownell, is based on "two primary forces which should sustain locomotive deliveries at high levels—the continued growth in revenue freight ton-miles and the relatively large numbers of road locomotives which need replacement by modern, more powerful, and more efficient units.

"Since 1959 revenue ton miles have been increasing an average of 5% annually, yet total horsepower on U.S. railroads has risen but 3½% a year over the past five years. A recent U.S. Department of Transportation estimate indicates that by 1975 American railroads will be called upon to carry 1.063 trillion ton miles of freight—an increase of 42% over 1969's record."



CONTAINER CARS, developed exclusively for that service by Pullman-Standard, are some 10 tons lighter than all-purpose models. Various sizes of boxes can be moved.

Brownell concludes that "just to keep pace with the growth in freight traffic requires additional horsepower. Added to this, is the urgent need to replace some 6,000 overage, economically obsolete road locomotives now operating on U.S. railroads. Conservative estimates indicate a locomotive replacement market of at least 1500 units annually over the next several years."

● **Freight-car growth.** Carbuilders are optimistic about their future. In the long range, says Henry A. Correa, president of ACI Industries, "there is the probability of real growth in annual freight car requirements because of the expectation that intercity freight volume handled by all types of carriers will increase an average of 5% per year through 1975." And he expects that the strong growth trend in car leasing which was charactersitic of the 1960s will continue.

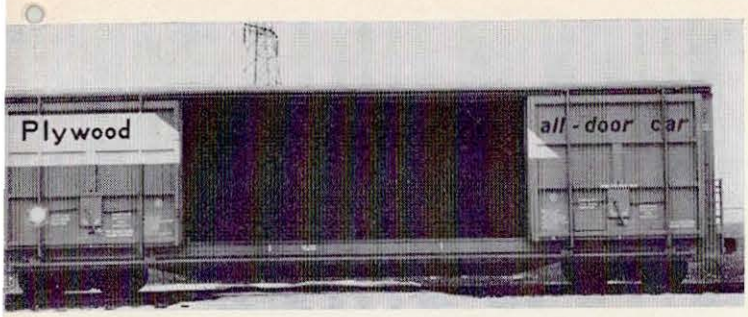
"The carbuilding division of ACF should have a good year," says Correa. "For the industry as a whole, we forecast a freight car production increase of 10 to 15% in 1970. The industry's backlog at the end of 1969 is estimated at about 42,000 cars, versus an estimated 32,000 a year earlier. This is just one factor in the better tone we foresee for freight car building in 1970.

"The new tax bill will permit rapid amortization of new equipment, giving equipment replacement incentive to the railroads. Another factor in the improved outlook for carbuilding is the new AAR regulation calling for the automatic retirement of freight cars at 50 years of age. Some observers expect an increase in per diem rates to be authorized by the ICC some time in 1970. This will, of course, make the ownership of freight cars more attractive to railroads," concludes Correa.

● **Sights set high.** "Pullman-Standard has set its sights high for 1970," reports E. T. Ahnquist, vice president and general manager. "One cannot forecast mathematically the effects of the five-year amortization on rolling stock because there is no precedent on which to project the future. Based on our judgements and in talks with railroad managements, we feel there is a strong possibility of an upsurge in purchases. The current severe freight car shortage indicates a need for the cars. The possibility of another freight rate increase next year would add to railroad net income."

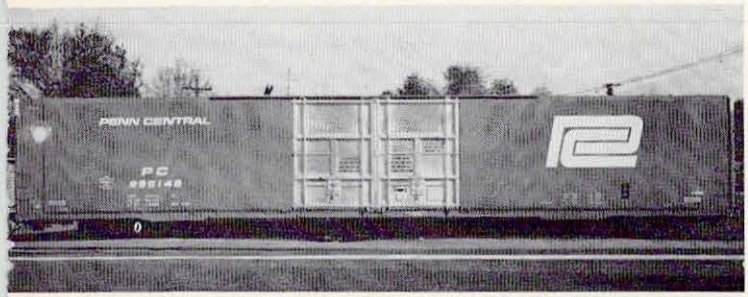
Pullman-Standard looks to a somewhat softer market for gondolas and covered hoppers this year, but expects that the new amortization should spark the demand for box cars. The P-S "waffle-side" all-purpose box car is expected to be popular because it is suited for general service or specific assignment and requires little of the maintenance associated with cars having wood linings.

Ahnquist says P-S development activities are concentrated on equipment for handling containers, on several cars for highly specialized services, and on development of new types of refrigeration systems, such as those using nitrogen. Pullman delivered 16,400 cars last year,

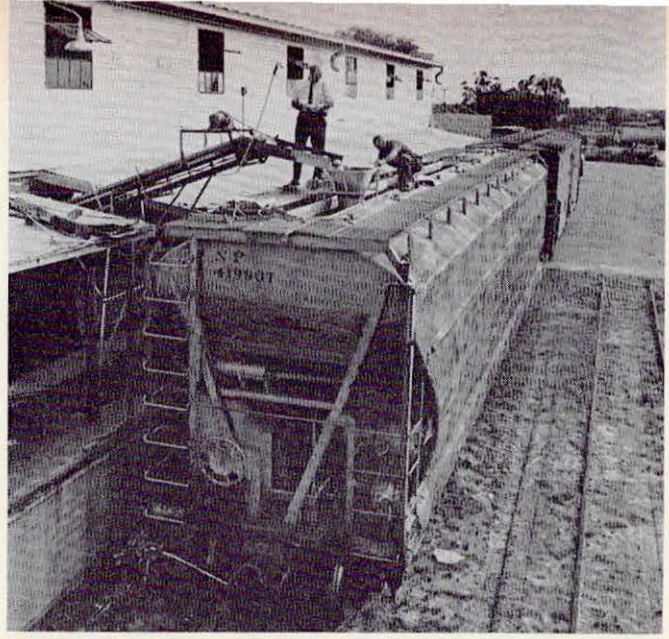


ALL-DOOR design of Thrall's is one of several box cars introduced by builders to simplify mechanical loading.

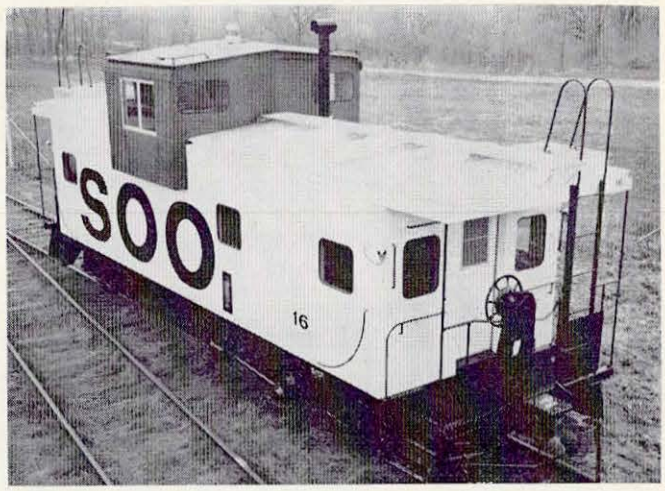
ARTICULATED HOPPER was developed by Bethlehem in cooperation with Chesapeake & Ohio to maximize capacity.



HIGH-CUBE CARS, this one built by Greenville, are handling steadily growing portion of automobile parts traffic.



CONDITIONAIRE, a refrigerated covered hopper developed by ACF, has hauled bulk potatoes and other perishables.



CABOOSES are being replaced by railroads to meet new crew comfort standards. Soo got its new cars from International.

up from 9,429 in 1968. It is possible, says Ahnquist, that there will be a plateau for car orders in the coming months with an improvement later, concentrated primarily in the fourth quarter.

● **More than replacement.** Bethlehem Steel is also optimistic, but recognizes current problems. "The nation's railroads see the need for new and improved equipment. The nation's carbuilders and railway suppliers have the facilities and engineering talent to meet the demand," observes John G. White, manager of railroad product sales. "Yet, the financial limitations of the railroads restrict their ability to satisfy the most obvious economic requirements. Real recognition of the benefits of a totally modern and efficient railroad freight-car fleet could well result in legislation that would ease the financing restrictions of today. Imagine, if you can, the catastrophe we would have if our automobiles, trucks, barges and planes were being replaced at less than 5% per year with a substantial percentage 30, or even 50, years old."

White expects that "good levels of buying should continue through the '70s." This year Bethlehem expects its own prospects to be comparable with 1969 results. "Demands will continue for the same general types of cars, but actual orders will likely be tailored to meet specific product and shipper requirements. Engineering developments to improve car characteristics and protection of lading will be more evident. The '70s will see major advances as existing car fleets are replaced." Bethlehem has been developing an articulated hopper car in cooperation with Chesapeake & Ohio (RA, July 28, 1969, p. 22). It has also been producing Trailer Train's new 68-foot bulkhead flatcar and is currently designing new configurations—one a 100-ton model without bulkheads for hauling steel reinforcing bars and another with adjustable, collapsible bulkheads for general steel products loading.

Richard Van Hassel, vice president and general manager of Fruehauf's Magor Railcar Division, expresses some doubts about the ability of money losing railroads to order cars, even with the benefit of the new rapid amortization. However, he is "cautiously optimistic" and does not see railroads having another bad year like they did in 1967. And even if funds must be expended on track and roadbed, he does not foresee simultaneous cuts in car spending. "Magor's sales in the past have included a large proportion of special cars," says Van Hassel. "I believe Magor will enjoy the same type of year from a sales standpoint as in 1969." Demand will be for covered hoppers, box cars, wood chip cars and gondolas.

● **Maximum cube and capacity.** Thrall Car, according to C. H. Wright, vice president, sales, has maintained full production over the past few years and

estimates volume will be even better this year. "As to the mix of equipment we will be producing in 1970, we anticipate that it will be substantially the same as 1969 with the emphasis being on maximum cube and carrying capacity," he reports. Research and development activities have been accelerated. Thrall has, adds Wright, "introduced several new freight car designs in the past several years and we have more than we will be marketing in 1970 and 1971." He continues that "regardless of changes in our tax laws some shippers urgently need cars and will buy special types to get their products to market more efficiently."

● **A land bridge?** While one wit recently observed, rightly or wrongly, that it seems the "land bridge is falling down . . . falling down," there is little doubt that railroads are finding a growing market for container transportation. "The container requirement for railroads is steadily increasing as the true intermodal situation develops," explains Frank Mularz, general sales manager for Dorsey Trailers. "The steamship companies have forced the issue with the tremendous numbers of containers that require handling by both rail and cartage agents for ultimate delivery. The intermodal concept has not yet reached its potential but has made significant strides. The past year has resolved standardization of container sizes through the efforts of the USASI and ISO organizations."

Trailmobile's George G. McManis, vice president of container sales, sees "intermodal containerization continuing to develop at the projected rate." However, he adds, "railroads (and associated operators) are showing little, if any, interest in containers in lieu of truck trailers and it is extremely doubtful that containers will replace truck trailers in the movement of domestic cargo for the foreseeable future. There are many reasons for this, most important of which are industry capital investment in terminals and rolling stock, extended amortization programs, and the operating efficiency of today's trailer equipment."

Containerization, as Trailmobile sees it, "will develop as a supplement to existing operations." Railroads and associated operators will provide the "wheels" to move containers with their railroad cars and container chassis being of increasing importance in the overall picture. "Purchase and lease of 'wheels' will increase and become a significant proportion of operating equipment," predicts McManis. ACF expects that the container segment of TOFC/COFC traffic will grow relatively more rapidly than the trailer portion from now on. Currently the ratio is about 10 to 1 in favor of trailers. David Bernstein, executive vice president of Fruehauf, sees the use of containers on rails "continuing to grow as we go into the 1970s."

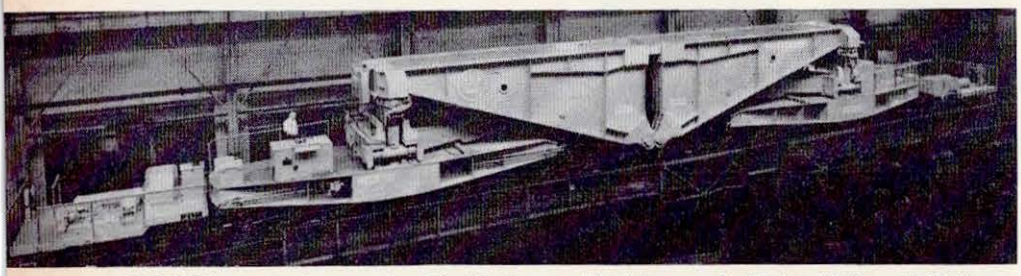
The National Railroad Trailer Pool operated by Realco grew to 18,000 units in 1969 and 2,000 more trailers are currently on order. R. E. Budorick, Realco president, expects that the intermodal effort will pick up this year, involving both container/chassis and the roll-on/roll-off system. A Geographic Pool Concept is being implemented in which members' peak requirements are anticipated by advance transfer of trailers from other regions. For the first time some of the container/chassis combination will be available through the Geographic Pools.

While economic uncertainties may level piggyback loadings in the first quarter, Budorick then expects that there should be a resumption of growth "at a moderately better rate than in 1969." Although he sees tight money as a challenge to his firm, he expects that the same problem confronting his customers may actually rebound to the benefit of Realco's sales.

Rail-Trailer's Container Marine division has purchased more than 100 container chassis for lease in intermodal operations, basing them at five port and inland points. It expects to expand its pool points from 18 to 30 in the course of this year. Intermodal Transportation Systems, which has been in business about a year, has developed its own specially designed "Intermodal Unit"—a container and chassis which can be used as a piggyback trailer or, without the wheels, as a maritime container. A few of these have been leased in the railroad field, but by far the bulk of leased ITS equipment consists of standard piggyback trailers.

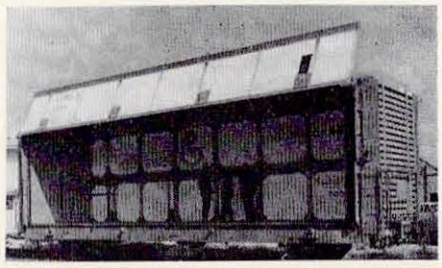
Palmer Bayer, ITS president, reports that ITS has passed the 3,000 mark in its leases of piggyback trailers, valued at over $20 million, and expects to see the figure doubled this year. At the moment the 40-foot dry van is the most popular railroad unit for ITS. Currently ITS is working with Computer Identics in developing and leasing piggyback terminal control systems based on the railroads' automatic car identification system (piggyback trailers also carry ACI labels). By late 1970, predicts Bayer, ITS expects to have two, and possibly three, of these terminal control systems in operation at railroad piggyback facilities. He adds that it is important for lessors to become leaders, "rather than mere money brokers, by applying imagination and innovation to developing and pricing their services."

(*Continued on page 92*)



600-TON generator car for Westinghouse Electric was built by McDowell Wellman.

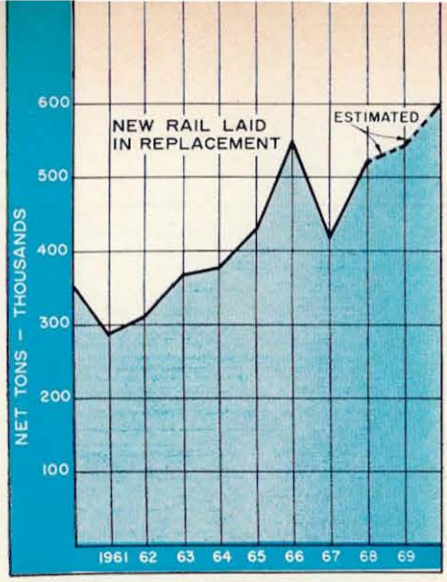
UNIT-TRAIN gondolas by Hawker Siddeley will soon haul Canadian coal.



FOUR-WHEEL box car for General Mills was built by U.S. Railway Equipment.

SPAN-BOLSTER tank car by General American carries record carbon dioxide load.

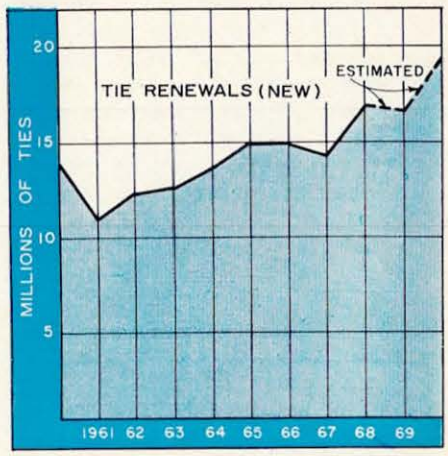
1970 OUTLOOK



RAIL RENEWALS for 1970, as estimated by Railway Age, will be more than double the all-time low reached in 1961. Both this chart and the one below show figures for the Class I railroads of the U.S.

M/W work will get more attention in 1970

Present indications are that crosstie renewals will rise by 15.2%, and rail renewals will be up by about 11.1%.



TIE RENEWALS, following a slight decline in 1969, are expected this year to resume the general uptrend that has been taking place almost without interruption since 1961.

By M. H. DICK, Engineering Editor

The derailments with which the railroads have been plagued in recent years have, in a disturbing number of instances, been caused by defective track conditions.

The result is that the track-maintenance practices of the railroads have become a focus of attention, not only in the public mind but also among lawmakers and regulators. Congress is being asked to make railroad safety a subject of federal regulation. At least one state is in the process of inspecting railroad trackage within its borders, mile by mile. Others are making gestures in this direction.

● **No and yes.** What has been the response of the railroads to all this furor over the condition of their tracks? Have they made an attempt to get their tracks out from under the spotlight by beefing up M/W programs? If what happened in 1969 is any guide to the answer, it's got to be "No." If what's scheduled for 1970 can be considered a guide, the answer could be a qualified "Yes."

These answers seem in order on the basis of figures compiled by Railway Age on the track-maintenance activities of the Class I railroads for 1969 and 1970. The chief engineers of nearly all of the country's largest railroads have provided information on the quantities of new ties and rail inserted last year and the miles of track surfaced. These same engineers also furnished estimates of the amounts of such work they are planning for 1970. With these data in hand it has been possible to make estimates of the amounts of such work performed by the Class I roads in 1969 and the amounts planned for this year.

For anyone looking for a significant uptrend in M/W activities last year the figures developed must come as a disappointment. For 1970, providing the plans now in the making are not scuttled by managerial edict, the prospects are much better.

● **Rail and surfacing up, but . . .** Looking first at 1969, there was, in fact, an increase in the amount of new rail placed in existing tracks compared with 1968 but this came only to about 5%. Estimates are that the Class I roads installed 540,000 net tons of new rail in existing tracks last year, which compares with 514,472 tons laid the previous year.

An increase also took place in the amount of track surfaced but this likewise was modest. Figures on the number of miles of track surfaced in 1968 and 1969 were provided by 26 railroads, including practically all the larger carriers. These roads reported they surfaced a total of 27,045 miles of track in 1969. This represented an increase of 1,163 miles, or 4.5% compared with 1968.

● **Tie insertions down.** Renewals of new ties actually declined slightly last year compared with 1968. According to estimates, the Class I railroads inserted 16,750,000 new ties, which compares with 16,783,779 ties actually inserted in 1968, as reported by Committee 3—Ties and Wood Preservation of the American Railway Engineering Association.

The actual tie installations in 1969 fell considerably short of the 18,000,000 new ties the railroad had originally planned. Either there were some cutbacks directed by management or there was an insufficient supply of crossties to fill the railroads' needs in their entirety. Perhaps both of these factors combined to bring about the reduction.

As might be expected in view of the stable nature of M/W programs in 1969, coupled with inflationary factors, expenditures for maintenance of way and structures showed a moderate increase last year. According to the AAR such expenditures totaled $1.115 billion for the first nine months, the latest period for which figures are available. This was an increase of about $70 million, or 6.6%, compared with 1968.

Prospects for 1970 present an entirely different picture, providing that present plans hold up during the year;

based on these, here's how the year shapes up for the principal categories of work:

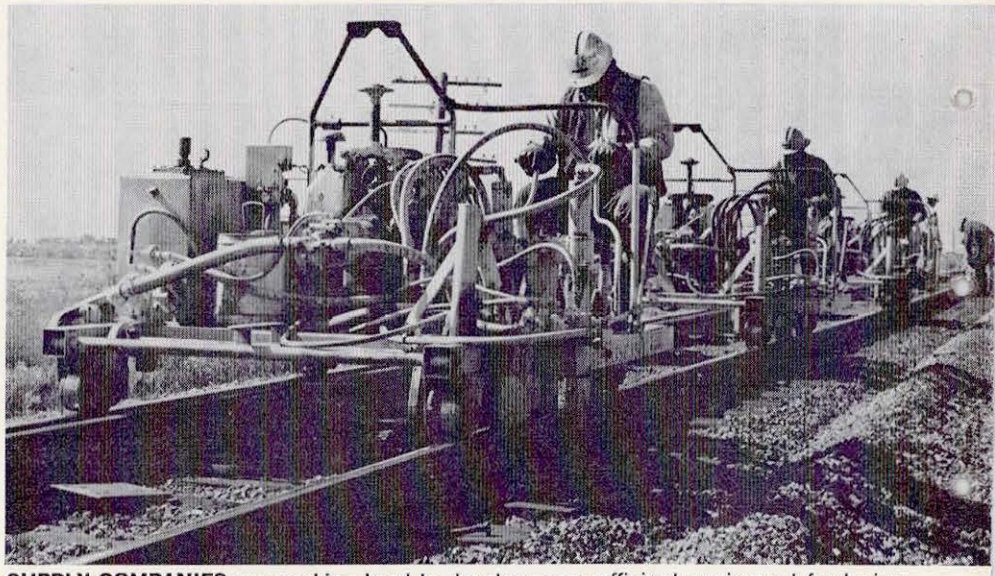
● **Tie renewals.** The Railway Age estimate is that the Class I railroads will insert a total of 19,300,000 crossties in their tracks for replacement purposes in 1970. This will represent an increase of 2,550,000 ties, or 15.2%, compared with the estimated renewals that were carried out in 1969. The chart shows how far tie renewals have progressed since the all-time low of 11 million ties was reached in 1961.

Any discussion of the crosstie situation would not be complete without reference to the trend of secondhand tie installations. This trend is definitely downward. Fiffteen railroads reported that they installed 407,887 secondhand ties in 1968. These same roads said they installed 292,265 such ties in 1969, and in 1970 they plan to install only about 247,000 ties of this type. A pertinent question is whether the railroads are running out of secondhand ties due to a slowdown in track abandonments.

● **Rail renewals.** The Class I roads will insert 600,000 net tons of new rail for replacement in 1970, it is estimated by Railway Age. This will represent an increase of 60,000 tons, or 11.1%, compared with the estimated rail renewals for 1969. The estimated figure for this year is more than double the 288,000 tons laid in 1961, which was the all-time low for as far back as records are available.

● **Track surfacing.** The 26 roads that provided figures on track surfacing said they plan to surface 30,676 miles of track this year. This will be an increase of 3,631 miles, or 13.4%, over the track surfaced by these same roads last year. Since these reporting roads represent practically all of the nation's larger lines, it is safe to assume that the total amount of surfacing performed by all Class I lines will increase in about the same proportion.

● **A closer look.** Having stated the over-all figures for both tie and rail renewals projected for 1970, it's worthwhile to look beneath these totals to see what might be happening in individual cases. This investigation brings out an interesting situation. Take tie renewals first. What we find is that on the majority of roads tie renewals in 1970 will not be significantly different than they were last year. A fair number of roads actually are expecting decreases to take place. The over-all increase of 15.2% expected to take place in 1970 tie renewals is accounted for by substantial increases on a handful of large railroads, five to be exact. On these five roads the increase expected to take place in tie renewals this year range from 21% to 114%.



SUPPLY COMPANIES are working hard to develop more efficient equipment for laying rail. Above, Fairmont Dual Spike Pullers at work on the Santa Fe.

TECHNOLOGY PLAYS A MAJOR ROLE

Somewhat the same situation prevails with respect to rail renewals, although the individual increases are even more striking. In rail renewals there are seven roads that expect substantial increases this year. Five of these roads expect their rail renewals to increase more than 50%. On one of them the expected increase is nearly 500%.

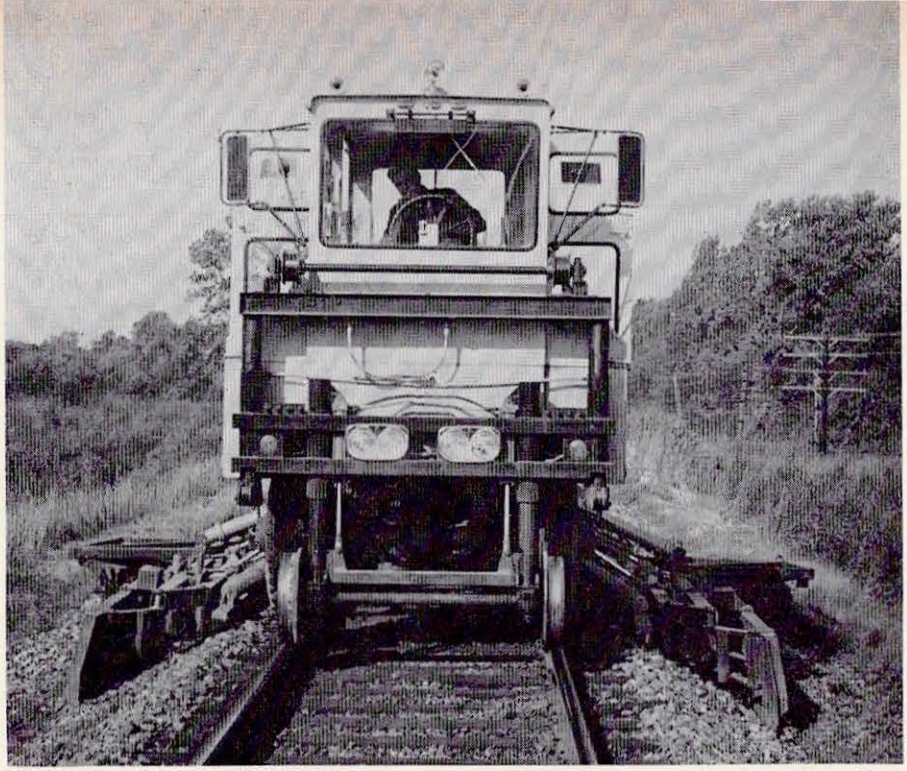
● **Two schools.** Is this just a coincidence—this disparity between the sharp increases projected on a few railroads and the flat projections on the majority of lines? Or is there a meaning of significance to be read into it? If so, is that meaning related to the questions being raised regarding the adequacy of track-maintenance programs?

It is possible that two schools of thought are taking shape among the railroads. It can be visualized that one school, apparently comprising the majority of roads, has adopted a wait-and-see attitude regarding the prospect of federal regulation of railroad safety. The other school, consisting of a relatively small number of roads, conceivably has taken the position that eventually they are going to be required to upgrade the condition of their tracks. In that case, why not start now? It isn't going to cost any less in the future. In fact, costs are certain to go up.

This matter of track safety is, in fact, the most important issue facing maintenance-of-way departments today. The problem isn't only one for the engineers, it's one for railroad managements too. That there will be government regulations to contend with can be taken for granted. The nature of the regulations and the manner of their administration present big question marks at this time. But the biggest question of all is this: Where is the money coming from? There is even some talk of the possibility of government subsidy, but this seems to stem more from desperation than from any conviction that there is any real possibility in such a course.

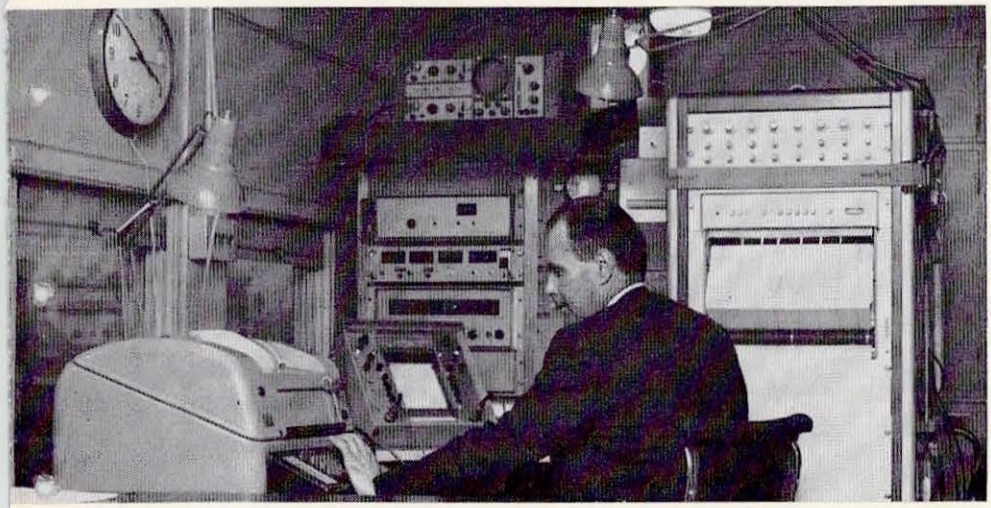
● **Government viewpoint.** The subject of federal regulation of railroad safety as it applies to the track—and the cost—came up in an address delivered last fall before the Roadmasters' Association by Kenneth Lawson, senior engineer, Office of High Speed Ground Transportation, Federal Railroad Administration. If FRA is asked to develop safety regulations covering railroad track, it would do so "with full awareness of the economic impact," Lawson said. "There is a cost of being safe but there is also a cost of being unsafe," he added, implying that the matter of cost was a "two-way street."

Lawson added, however, that the



BALLAST-WORKING MACHINES are currently getting considerable attention. Here is a Universal Track Machine working on the Norfolk & Western.

IN MAINTENANCE-OF-WAY WORK



TRACK-MEASURING CARS are in increasing use. Shown is operator's cabin of CN car which has on-board computer to analyze (and print out) measurements.

railroads would not be asked to put performance specifications into effect without an attempt being made to "provide you with assistance to respond thereto." This was apparently a reference to the possibility that Congress would be asked for financial assistance to conduct research in the area of track safety. But he expressed the opinion that the potential of the railroads for conducting research is much greater than what can be expected from the government. The way he sees it is that the federal government would concentrate on basic research, including "futuristic options," while the railroads would confine their efforts to near-term problems.

A research project in the area discussed by Lawson is the proposed test track OHSGT is planning jointly with Santa Fe. This track, to be installed in a heavy-duty freight line on Santa Fe, will involve the testing of various types of concrete beams and slabs, concrete ties and means of stabilizing the ballast. A site for the test section has been selected but a date for starting construction has not been established.

● **Current trends.** Meanwhile, the problem of maintaining their tracks to the highest standards possible with the money made available to them remains the basic concern of M/W officers generally. Progress continues in the development and application of more efficient machinery, with interest currently centered on ballast-working equipment and efforts to develop more efficient machines for use in laying rail. Rail laying was one of the first M/W operations to be highly mechanized but the average high-production rail-laying crew still requires more manpower than any other track-maintenance task.

The reductions that have been made in the forces available for doing maintenance work are forcing the railroads to move in the direction of increasing the amount of track-maintenance work that is done under contract. For years some roads have had their ballast-cleaning and track-plowing work done by contractors. To these are now being added track surfacing, rail laying and tie renewals on some roads. Another growing practice is that of having M/W machines repaired and overhauled by outside concerns.

The trend toward having maintenance work and related operations done under contract may be expected to continue but doubtless very few roads will follow the example of one line that has discontinued its engineering department altogether, this function being turned over to a consulting firm.

Other meaningful developments forming a part of the current M/W picture include:

—Increasing interest in the use of track-measuring cars, for developing data, possibly by computerizing the measurements, which will serve as a guide in the allocation of maintenance funds.

—Adoption by one road of the practice of interspersing concrete ties with wood ties, with the goal ultimately of arriving at a situation in which all the ties will be concrete.

—Continuing efforts to develop features of insulated joint construction that will reduce maintenance and add to service life.

—Increasing interest in means of heating or cooling continuous-welded rails at the time of laying with the objective of minimizing stresses produced by changes in the ambient temperature.

—Use of computerized procedures of clearing high, wide and heavy loads, and for analyzing bridge stresses.

—Increasing use of precast, prestressed concrete caps in replacement of wood caps in timber trestles.

—Installation of facilities at diesel terminals for treating waste water, the purpose being to comply with requirements of public bodies. ■

1970 OUTLOOK

C&S outlays: $114 million

Expenditures for both communications and signaling equipment will rise substantially this year.

By R. W. McKNIGHT, S&C Editor

Communications and signal officers have their work cut out for them in the decade ahead. Add more equipment installations to a rapidly advancing technology, and the results will keep C&S men busy. Indications from railroads and transit authorities in the U.S. and Canada are that spending for equipment in 1970 will be up substantially from 1969. Total expenditures for equipment in the C&S area should reach $114 million this year.

● **Signaling up 44%.** Spending in 1970 for signal equipment is estimated to be $65 million, an increase of $20 million over last year. If these planned expenditures are made during this year, then the total of 4,800 units of equipment installed last year should rise to 6,900 units in 1970. Several reasons are given for the planned increase in signal expenditures. "Obviously" as one signal engineer says, "inflation plays a role in our spending plans. Also, we are taking into account the signalmen's wage case which will probably be settled this year. Too, some signal engineers have been so busy installing crossing protection equipment, they've got to have a year to catch up on their other projects."

Training of unskilled and semi-skilled men in the signal departments has been initiated by several railroads in the past year or two. This will make available men with the skills necessary for installation of equipment. Canadian National, Long Island, Santa Fe and Southern Pacific have signed training agreements with the Brotherhood of Railroad Signalmen. In general, these agreements provide for training of unskilled and semi-skilled men and include provisions for advancements in job classification and pay when the men successfully complete examinations on their newly developed skills.

● **Communications outlays rise.** Spending for communications equipment in 1970 will be up 21% over last year. The planned expenditures will total $48.5 million for new equipment and systems to increase the communications capability of the railroads and transit authorities in the U.S. and Canada. From an equipment standpoint, the increased spending in 1970 should bring installations up to 28,400 units an increase of 4,100 over last year. As in the past few years, heavy expenditures will be in the areas of increasing circuit capacity for voice and data transmission.

Typical of the impetus given this area of communications is the impact of management information and control systems. Missouri Pacific, for example, began last year to install a new Transportation Control System (TCS) at Little Rock, Ark., Memphis, Tenn., Kansas City, and St. Louis. In a year-end statement, Downing B. Jenks, president, said: "Among the primary goals of TCS are the programmed movement of individual cars across the 12,000-mile MoPac system; computer formulation of the instructions necessary to handle each car; a constant monitor of each car's movement with immediate reporting of exceptions for correction by management, and forecasts of car supply and demand.

"In line with TCS, we are setting up a series of Customer Service Centers to which a shipper can make one telephone call to a central point for handling of his transportation needs. Part of MoPac's 1970 capital improvements program will be used to extend the first phases of TCS to 15 more locations," Jenks said.

● **Major C&S projects.** In addition to replacement of obsolete and worn out equipment with new and improved units, several general areas of communications and signaling efforts will receive major attention from C&S officers and staffs during the coming year. Reports in this Railway Age survey from railroads and transit authorities indicate the following areas of work in 1970.

—Install automatic car identification systems. Indications are that as many as 200 ACI scanners may be installed during 1970. Railroads and transit authorities installed 30 scanners during 1969.

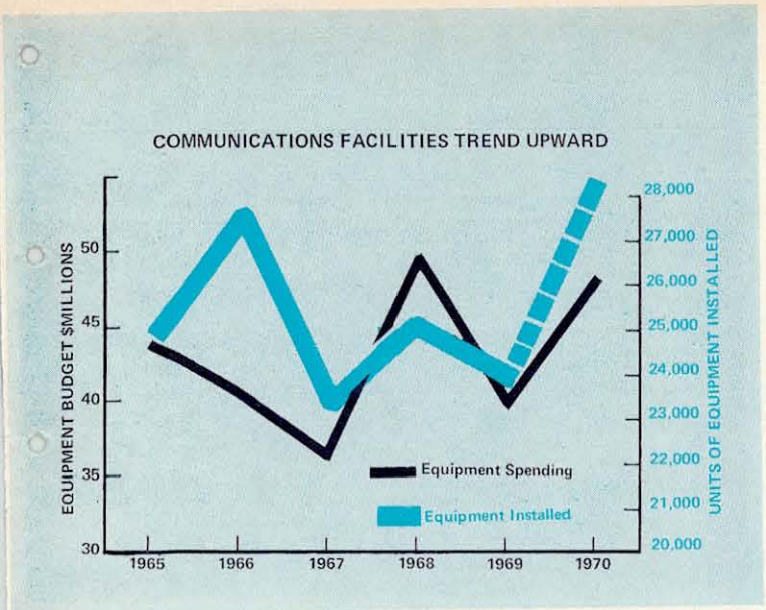
—Complete replacement of vacuum-tube radio sets with transistorized units. Dispatcher control of wayside base radio stations will be extended for complete mainline coverage on several large railroads. Some roads have indicated that they will install radio repeater and relay stations to provide coverage to all mobile units in a territory including off-and on-track vehicles.

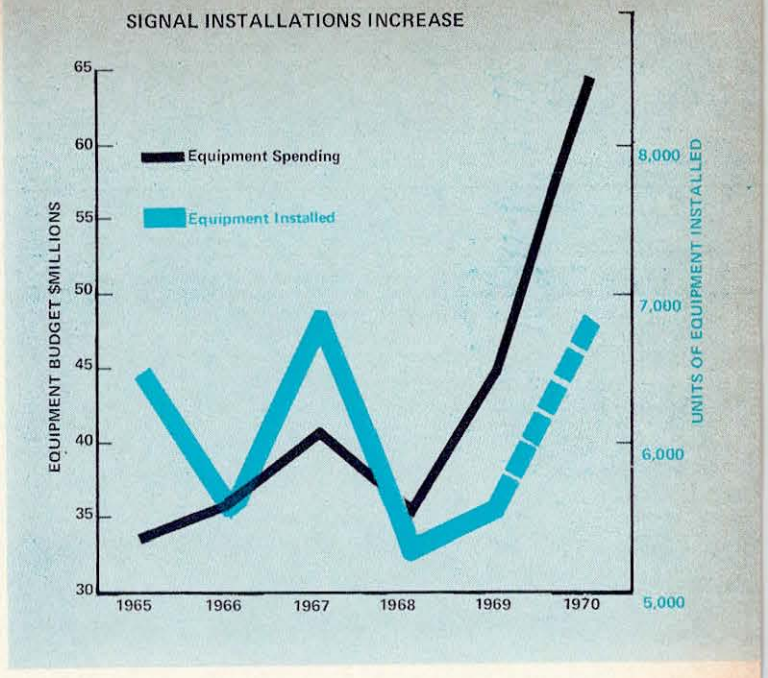
—Direct distance dial telephone service will be expanded by installing new automatic telephone exchanges. Circuit capacity will be increased by installing carrer channelizing equipment. A few medium-sized roads with pole lines are installing new line wire and transposing existing and new lines to handle carrier equipment operating in 30 kHz and 150 kHz frequency ranges. This "stacking" of carrier circuits in lower to higher frequency ranges enables one wire pair to handle several (possibly up to 48) simultaneous telephone conversations. Most automatic telephone exchanges replace an attended exchange, so the new PABX helps pay for itself by reducing labor costs.

—General upgrading of circuits for data transmission will be undertaken during 1970. Several railroads will complete extensive private microwave systems, while newcomers to the microwave field will expand their initial systems. Space diversity (providing for two transmission paths) will be added to some existing microwave systems to improve reliability.

—Extensive installations will be made of audio-frequency track circuits in welded rail territory at highway grade crossings to eliminate the need for insulated joints. Some railroads are using these audio-frequency track circuits for crossing protection even where welded rail is not a factor, because of the savings in first cost and maintenance involved in not having to install insulated joints for determining track circuit boundaries.

—Along similar lines, several transit authorities are installing cab signal systems with high-frequency track circuits. Again, an advantage is the elimination of insulated joints, and also elimination of wayside signals and automatic train stop trip devices.





—Extensive two-way radio systems will be installed or completed by transit authorities during the coming year. It has become standard to equip all vehicles (transit cars, buses, automobile and maintenance vehicles), and personnel such as supervisors and policemen with radio sets.

—Centralized dispatching and control headquarters for railroads and transit authorities will be installed during 1970. From such centralization, better and more effective control of operations is obtained. However, with such centralization, extensive communications facilities must be provided. Several railroads plan to centralize readouts from hotbox detectors at the dispatching headquarters. Dispatchers will use two-way radio to notify train crews of overheated journal conditions.

—For transit authorities, closed-circuit television and loudspeaker systems will provide the communications necessary to contact people on station platforms. Also, CCTV will give supervisors the ability to see what's going on, and intercom systems will give them the ability to talk to passengers and supervisory personnel in the field.

—Increasing installations will be made during the year of detector pairs —hotbox and dragging equipment. Wheel counting units, so necessary with hotbox detectors, will provide information on location of cars within trains that trip dragging equipment detectors.

● **Computer changes.** For the new year and the decade ahead, computer specialists, including programmers, will be refining programs and techniques to bring the paper avalanche down to manageable size for management. While the '60s saw the extensive application of the computer, the '70s should see refinements and improvements in computer reports and performance. Some experts envision the application of small special-purpose digital computers to take the paper or data flood from the giant computers and produce refined and edited reports for top management. Such systems would use a variety of visual display techniques to make information more understandable to managers.

The '70s will probably witness a greater expansion of communications facilities than ever before. Growth of company-owned facilities will continue. New specialized communications common carriers will provide competition for the telephone and telegraph companies. Managers and communications officers will have much to choose from as regards equipment and services in the area of communications and computers.

Recent filings to the Federal Communications Commission involve two groups of companies that intend to provide specialized data transmission capabilities across the United States. Microwave Communications Inc. and associated companies have proposed a nationwide microwave network to furnish data transmission facilities. Another firm, Data Transmission Co. (subsidiary of University Computing Co.), told FCC that it wants to construct a Boston-San Francisco microwave network covering 35 major metropolitan areas. Datran would have 10 district offices for computerized switch-

A slight drop in C&S during 1969

Signal equipment installed in 1969 by U.S. and Canadian railroads and transit authorities showed an 11% decrease from the previous year. Units installed totaled 4,796. However, communications equipment installations declined by only 4.5% to a total of 24,261 units installed in 1969.

●

Heaviest work centered on highway crossing protection (over 1,400 crossings so equipped in 1969), installation of safety detectors totaling 469, and installation of over 800 miles of centralized traffic control systems. On the communications side, over 6,300 radio sets were purchased as new equipment or for replacement of older units. Over 500 computer input/output units were installed and over 5,000 printing telegraph machines were installed by railroads and transit authorities.

●

Automatic car identification systems began to appear, although some were of the test variety to enable a road to gain experience with the equipment and data output before applying ACI on a system-wide basis. Thirty scanners were installed during 1969, as follows: CN-8, CP Rail-3, DM&IR-4, IC-4, MP-5, Santa Fe-4, Soo-1 and Chicago Transit Authority-1. CTA is using ACI to control a junction switch to automatically route Dan Ryan rapid transit trains where the line joins the Loop elevated structure.

A NEW YEAR MESSAGE TO OUR READERS

It was a good year for us at Railway Age—as good, anyway, as it was for our customers (who, like us, did rather better than they thought they would do, but not as well as they should have done.) The start of a New Year may be as good a time as any to look back, to thank the powers-that-be that we're still alive and in the black, and to pay grateful respects to those who helped to keep us there.

First on any thank-you list must be our uncommonly loyal band of readers. They stuck with us through issues thick and thin and gave us, once again, a remarkable demonstration of confidence by renewing their subscriptions at the rate of 81%, which is just about unsurpassed anywhere in the publishing business. (We have no quarrel with those who give their magazines away; we ourselves give away nearly 10,000 copies of our Freight Traffic issue each month, to see that it gets to every leading shipper in the country—since we do, after all, publish the only shipping issue in America devoted exclusively to promoting ship-by-rail. But we still take an old-fashioned pride in the fact that our week-to-week circulation is paid.)

Also high on the list must be those advertisers, both railroad and railroad supplier, who helped us, in 1969, to increase our share of the total available market—and thereby helped us to come closer to doing the kind of trade-publishing job which we feel our industry needs. It was, for example, strong advertiser support that permitted us to bring our readers such costly editorial enterprises as Gus Welty's 12-part series on Tomorrow's Railroads. It was such support that permitted us to continue to maintain a large and specialized editorial staff, and to keep this staff pretty constantly on the prowl for the in-depth news while it was still news.

The very special thanks of the editors go to those advertisers who never threatened to pull out a page of advertising because we did something they didn't like—and equally to those who never demanded a page of free editorial space in return for a page of paid commercial (P.S. Neither device works very well.)

We pay our respects, too, to that great—and for the most part, under-recognized and under-rewarded—band of public relations men, from clerk to v.p., who worked so willingly with our own leg men and writers to nail down the news, and to dig up the photos to illustrate it. And, finally, we thank all who were quick with praise when they liked what we did—and tolerant when they thought we slipped.

To all of you, we wish a happy and prosperous year and decade. Because if yours is, ours will be.

Robert S. Lewis
Publisher

Luther S. Miller
Editor

ing. Datran plans to seek interconnection rights with the telephone and telegraph companies to provide a truly nationwide service.

● **Telpak still in limbo.** At the moment, the increased Telpak tariff for bulk communications has been suspended until Feb. 1. Although FCC suspended the increased rates, court action by some protestants may hold Telpak in limbo for another few months.

Many railroads, of course, are planning expansions of their own private communications systems. Southern Pacific, for example, will extend its microwave system from Dallas to East St. Louis, Ill., 897 miles with 36 repeater stations. Also, SP will install a 110-mile system on the Northwestern Pacific and a 263-mile microwave system for its Black Mesa Pipeline subsidiary. With completion of these systems, SP will be operating 6,053 miles of microwave with 215 stations.

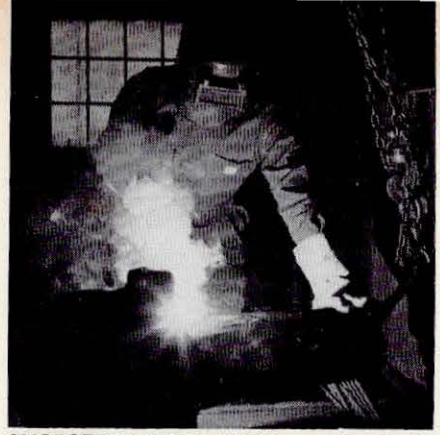
● **ACI tempo increases.** With the interchange freight car fleet scheduled to be equipped with automatic car identification labels by June 1, this year will witness a full-scale push for installation of ACI scanners. Indications are that as many as 200 scanners will be ordered this year. Immediate savings for many railroads will be in checking inbound and outbound trains at major yards. A few railroads have already made plans to place ACI scanners in approach to weigh-in-motion scales.

● **Signal studies important.** For signal officers, 1970 may be a year of the return to fundamentals, that is, to make cost-benefit analyses of proposed signal projects, then sell them to management. One signal engineer reports that interlocking consolidations offer a prime area for a high return on the investment. Also, the automatic interlocking, often neglected (it's not very glamourous), can produce savings in labor costs to pay for it in one to two years.

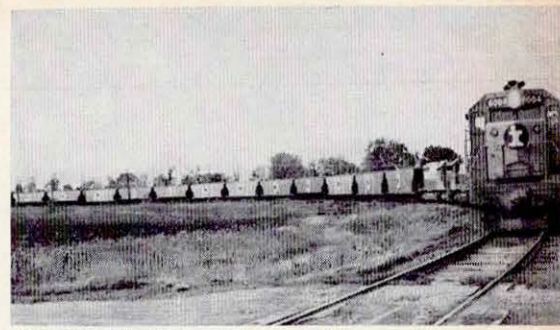
Another area of re-evaluation is that of centralized traffic control utilization. Computer simulation of train operation plus analysis of CTC train graphs have indicated—at least on some railroads—that some passing sidings are underutilized. Adjusting of train schedules or re-arrangement of controlled sidings can reduce delays for meets and passes or make possible removal of unused signal equipment.

Continued major signal projects during 1970 will be in centralized traffic control, highway grade-crossing protection equipment and completion and updating of automatic classification yards. Roads such as Burlington, Penn Central and Santa Fe will be placing new automatic yards in service during the year. ■

1970 OUTLOOK



SHOPCRAFT WAGE CASE remains to be settled in the New Year.



COOPERATION is still needed to provide new services, new jobs.

Labor: Problems old and new

Much of this year's activity will consist of wrapping up 1969, but there are some new factors.

By **GUS WELTY,** Senior Editor

You could spend hours, days, weeks in trying to figure what's going to happen in 1970 in the troubled area of rail management/labor relations.

You could also consult an astrologer, or get a reading from tea leaves, or flip a coin.

Any of these more-or-less scientific methods might produce about the same result, with the same non-guarantee of accuracy in prediction.

• **Good news and bad news?** The new year *could* see real progress toward a strengthening of the industry—through cooperative management/union programs to improve service and firm up the railroad's competitive position. The new year could also see almost constant conflict—involving just about every rail labor organization on just about every issue imaginable.

The old year, 1969, was a stage-setter for '70. In a way, it was a time for beginnings—not endings.

• **Problems for '70.** Consider these individual dramas, with endings yet to be written:

—Since 1959, the industry has been grappling with the perplexing problem of the locomotive fireman. Early last year, there seemed to be some hope that an ending could be composed through quiet but intensive negotiations. But the talks broke off, and so did later discussions which involved just one carrier. Now, the dispute is entering a totally new stage, a kind of super-mediation with a super-mediator appointed by Secretary of Labor Shultz.

—In 1969, for the second time in the late '60s, the shopcraft unions brought the nation to the brink. Under another kind of super-mediation, a settlement was reached—and it was the type of settlement which held something for all concerned, wage and benefit gains for the employees and a measure of work-rules relief for the carriers. But one shop union refused to accept the agreement which union negotiators had OK'd.

FIREMAN-MANNING CASE is also open as new talks get under way.

—With no-change provisions of past agreements expiring Jan. 1, 1970, virtually every rail union is hammering on the industry's door with new wage/rules demands. Not a one of these new cases has been settled. And, with rejection of the shopcraft agreement—which did contain wage-increase provisions for 1970—there is as yet nothing firm enough to serve as any kind of pattern.

—One of 1969's most imaginative approaches to industry/employee betterment came close to a conclusion, in discussions involving one railroad and the United Transportation Union. It came close—but it didn't go all the way, and so it remains to be seen in '70 whether Illinois Central and UTU can get together and work together on what has been termed a "jobs commission."

• **Labor in a time of change.** These are specific problems which both management and union representatives will have to face up to this year. But there is also a long list of other problem areas.

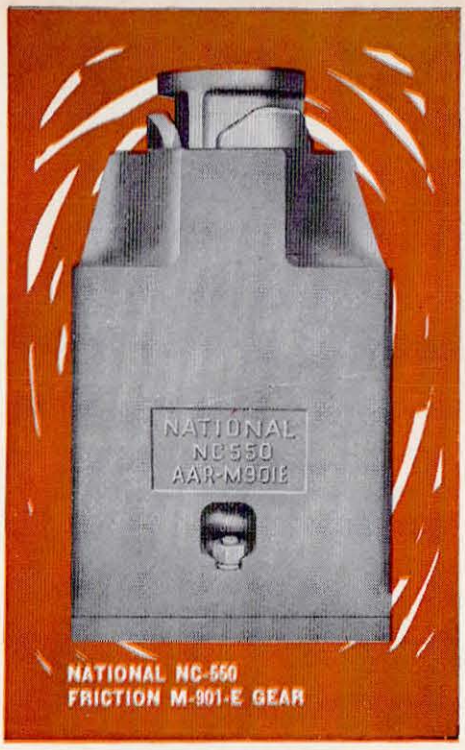
There is, for instance, the matter of labor's split—with five union chiefs pulling out of the Railway Labor Executives' Association and setting up their own organization, the Congress of Railway Unions. CRU has the three largest organizations—UTU, the Brotherhood of Railway and Airline Clerks and the Brotherhood of Maintenance of Way Employes. RLEA is left in a peculiar position—with its remaining members representing a majority of unions and a minority of employees. The parting of the ways was not amicable. If a real feud should build up in labor, management could quite easily be caught in the middle.

Another possible problem for rail management and labor lies in the fact that 1970 will be an extremely active year on many other bargaining fronts. The year began with General Electric locked in a wage battle with two major organization. Before long, Teamster negotiations with the nation's trucking industry will be heating up. Later, the rubber and automobile industries will have their turn at the bargaining table. It's only human nature—and, perhaps, good politics—for union negotiators to keep one eye on what the other fellow's getting even as they try to pry loose concessions in their own cases.

• **A new look in Washington.** Then, there is government to be considered. As 1970 begins, so also does the second year of the Nixon Administration's stewardship of the nation's affairs—and even after a year's observation, it's difficult to assess government's feeling about what role (if any) it could or should play in major management/union disputes.

At the outset, the new Administra-

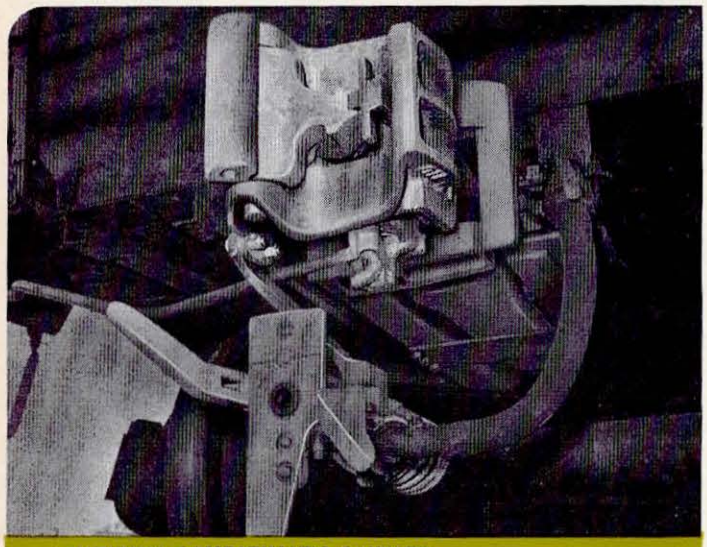
NATIONAL NC-440
ALL-RUBBER M-901-E GEAR



NATIONAL NC-550
FRICTION M-901-E GEAR

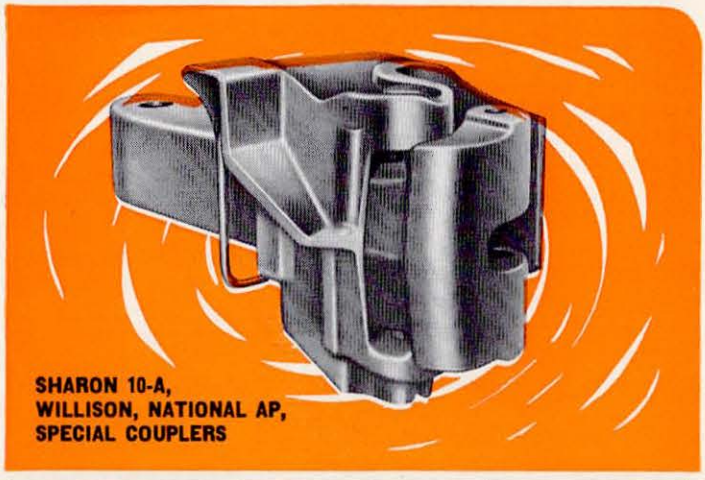
NATIONAL NC-660
RUBBER-FRICTION M-901-E GEAR

Draft Gears

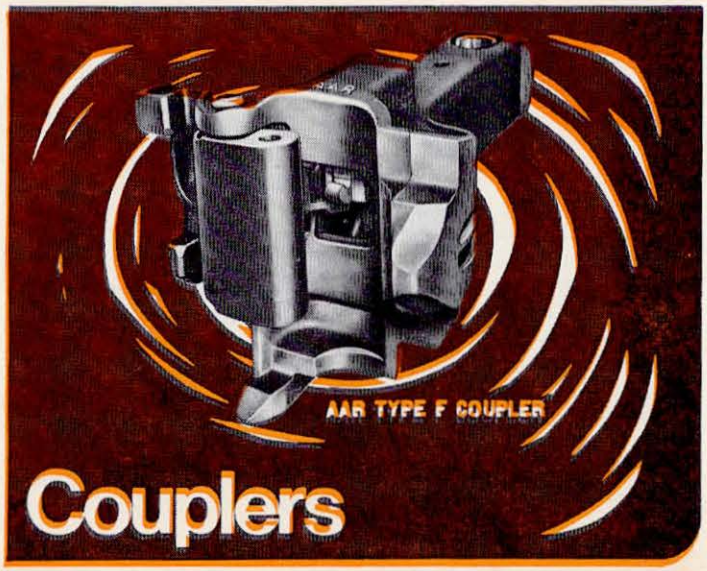


NATIONAL COMPATIMATIC COUPLER

AAR TYPE E COUPLER

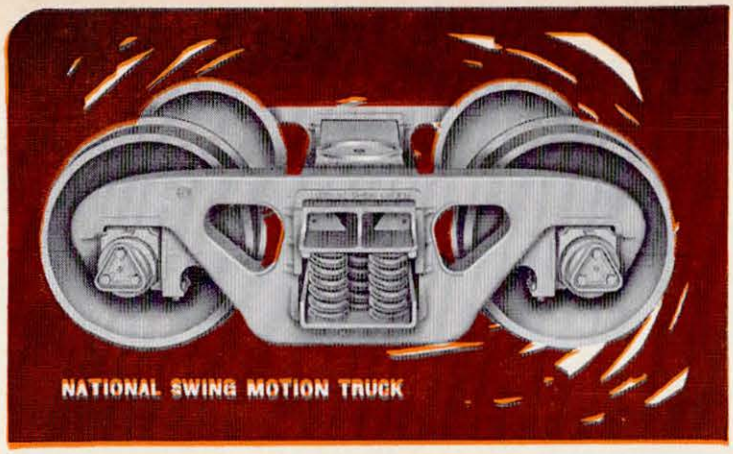


SHARON 10-A,
WILLISON, NATIONAL AP,
SPECIAL COUPLERS



AAR TYPE F COUPLER

Couplers



Trucks

National provides solutions to railroading problems by broadening the area of choice

National not only offers you a wider choice by broadening its product line, but also provides you with solutions to all normal operating problems involving draft gears . . . trucks . . . couplers. And when abnormal problems arise, we cut these down to size, too, through our unparalleled research, development, and testing facilities.

You're already familiar with National's Couplership. National virtually wrote the book on automatic couplers of all types. Right up to today's fully compatible and automatic coupler — the exclusive National Compatimatic. Now we're doing the same with draft gears. There's one for every application — all-rubber, rubber-friction, or friction.

And in trucks, we've even capped the National Super C-1 and Wedgelock developments with the National Swing Motion Truck. It's the truck for the 70's that permits operation to speeds of about 100 mph with either new or used wheels . . . with either empty or laden cars . . . without excessive wear, danger of derailments, or damage to cars or lading.

NATIONAL CASTINGS DIVISION
Midland-Ross Corporation

GENERAL OFFICES • Sharon, Pennsylvania
SALES OFFICES • Chicago • Philadelphia • Richmond
St. Louis • San Francisco • Cleveland

A-4746

NO "BRIGHT NEW ERA" YET—BUT ALL THE SIGNS AREN'T BAD

tion was described as "non-interventionist." This was probably a good idea, since it tended to put bargainers in all industries on notice that their problems were their own to solve. Non-intervention, however, has worked out to be something less than a flat, no-exceptions policy.

Government action during Nixon Year 1 didn't compare with the action earlier in the '60s, when arbitration was twice imposed to settle rail labor disputes. Government last year didn't have to go that far. But emergency boards *were* created where deemed necessary—and the judgment of what was necessary didn't much differ from past experience. Too, the action of the Administration in (1) supermediating the shopcraft wage case and (2) trying to do the same thing in the fireman-on/fireman-off case could hardly be called "non-intervention."

As a matter of basic domestic policy, the Administration is now committed to programs designed to halt the inflationary spiral of the late 1960s. Relatively little has been said, however, regarding management/labor obligations as a factor in the anti-inflation fight. Apparently, railroads—along with other key industries—will have to wait just a bit longer for some clear indication of what (if anything) to expect from government sources when hard bargaining begins.

Government may also be heard from on still another front—this one involving policy in critical strike situations. It's understood that a report has been prepared for the President—and that the subject *may* be touched upon in Mr. Nixon's State of the Union message. Best guesses now are that (1) definitions of "national emergency" strikes will be tightly drawn, and (2) the role of the Department of Labor in mediation may be redefined and strengthened.

● **A matter of responsibility.** By and large, however, most observers are inclined to take the Administration at face value when it insists that government ideally should play a minimal part in management/labor affairs. This, in turn, increases the responsibilities of the negotiators themselves—whether they like it or not, whether they're ready to accept it or not.

In a real sense, negotiators in the railroad industry—on both sides—will be on trial in '70. And, as one observer sees things, a few broad adjustments in techniques may be needed.

This observer—blooded and somewhat bloodied by recent encounters—is inclined to find a pox in both houses: "We talk a lot about trying to improve relationships—but that's all a lot of it is, talk. You still find some people in management operating on a policy of what a cynic might call connive-and-conceal. You still find people in the organizations whose main aim seems to be to block *anything* that management needs or wants. And on both sides, you still find people who aren't happy unless they're taking advantage of every available loophole—you know, really socking it to the other guy every way you can, just so long as it isn't specifically prohibited in the agreement."

And what happens? "You wind up with a lot of nit-picking and a lot of bad feeling—and no trust at all. Maybe in the end you wreck the industry *and* the unions."

● **Labor's not happy, either.** A union officer takes a similar slant, in talking about a dispute that has dragged on for months, tying up personnel on both sides and blocking agreement in other and more important areas: "What you have is a situation where either side could give in completely and not lose a thing. But the union wants to rub management's nose in the mud, the management would like to do the same thing to the union—and both sides are desperate to save face."

On the plus side

● **Where there's hope . . .** If you take the record, add a dash of optimism and stir well, you come up with a sauce that is not all bitter:

—In the late-1969 shopcraft settlement (the pact which the sheet metal workers' organization rejected), there was a glimmer of the kind of give-and-take that's much needed in rail bargaining. Negotiators on both sides accepted a trade-off principle—money for rules relief. It was, of course, on this exact point that the sheet metal workers balked—figuring perhaps that they had more to lose by rules revision than did their brothers in the other metal trades. But the bargainers, aided by government mediators, *were* willing to make negotiation a two-way street instead of the one-way expressway it often seems to be.

—The United Transportation Union did not, and quite possibly will not, create a new crisis in the fireman-manning dispute. UTU was free to exercise self-help late last year. General chairmen of the former Brotherhood of Locomotive Firemen & Enginemen, now part of UTU, voted overwhelmingly to pursue the cause they've chased since 1963 and the fireman-off award of Arbitration Board 282. Cool heads prevailed. UTU and the carriers agreed to further mediation, originally scheduled to begin Jan. 6 and now set for later this month. In this new mediation, UTU will have certain principles to protect. But there is a strong feeling that top people in the organization, as much as top people in rail management, would offer up prayers of thanksgiving if, somehow, the old dispute could be given a fast windup.

—Though it's an isolated case, there has to be some encouragement to be drawn from the experience of IC and UTU in working toward creation of their so-called jobs commission. There are new realizations involved in this situation, on both sides. At the heart of the proposal is the principle that the better life—for all concerned—depends upon the health of the enterprise. IC people have worked closely with UTU officers at all levels of responsibility. IC people have criss-crossed the system, explaining precisely what the idea is, why it's important and how it can be translated into action. Almost without exception, there has been a positive response from union officers and members and an expression of awareness—that new and improved jobs can only be created by a going concern which is able to create new services.

● **Temptation, and how to fight it.** With another turn of the calendar—and with the start into the 1970s—there's a temptation to reach for enthusiasm, to talk in terms of the proverbial "bright new era." It's a temptation that has to be resisted.

This new year will be no easier to handle, in the management/labor context. Bargaining will be difficult. If the economy does slow down significantly—and many experts think it will—then the revenue/expense crunch can only get worse, as union negotiators fight for hefty wage/benefit increases from managements that may be hanging onto solvency by their bloody fingernails.

● **Putting it all together.** It's impossible to sum up a new year in advance. It's difficult even to assess the real importance of what's been happening in the recent past. Most of the usual phrases for such things are starting to show wear and tear—phrases such as "cautious optimism," or "hope for a breakthrough," or "signs of progress."

Possibly the best "and finally" comment is merely this: More people in management and in union leadership are thinking in terms of solving problems—and less in terms of creating problems. If this attitude can prevail, 1970 may not be such a bad year, after all. ■

1970 OUTLOOK

Congress: A new sense of urgency

By **FRANK MALONE**, Washington Editor

Before the 91st Congress adjourns for good, late in 1970, there will be a strong chance for passage of a mixed bag of some good, some bad, legislation affecting the rail industry.

How strong is strong? About 70-30, as things stand now, at the start of Congress's second session.

Good or bad, the pending legislation represents a tighter Federal fist around rail operations than provided in existing public law.

● **"White paper" due.** Meanwhile, important new legislative proposals affecting railroads could come out of recommendations which the Federal Railroad Administration has prepared at the request of Secretary of Transportation Volpe. Contents of this so-called "white paper" on the railroads were still unknown last week. Before being made public—probably in February—the recommendations must pass the scrutiny of the Bureau of the Budget, and this is still under way. The "white paper" arose out of Secretary Volpe's request last year that FRA Administrator Reginald Whitman come up with proposals designed to achieve a fairer balance of Federal transportation outlays. Railroads have long claimed that Federal investment in transportation has lopsidedly favored their competitors.

● **Hold-overs from '69.** Whatever the "white paper" says, there are at least three reasons for expecting something to happen on the Hill this year:

—Much essential groundwork was completed in the first session (1969).

—Rail issues that have hung around Capitol Hill for years are now being pushed with energy new to veteran Washington observers.

—This will be an election year, and some of the rail issues make good campaign fodder.

● **Wide range of proposals.** The scope of suggested laws is broad. They cover passenger service, safety, rapid transit, unfair state taxes, and recovery of legal fees in suits against carriers. Proposals in all of these areas have been put into legal language and have made progress to varying degrees. Another issue, the freight-car shortage, has been having its annual airing, but awaits legal structuring. Action is likely to come, however, with or without precise legislation on car supply.

Although such legislation could be passed this year, it probably wouldn't become effective before 1971.

There is one measure, however, that was passed in December and set to take effect next Dec. 25. That is the hours-of-service act (public law 91-169) that reduces maximum railroad work hours from 16 to 14. After two years, the maximum goes down to 12 hours. The exception will be carriers employing 15 or fewer workers (short lines), provided the Secretary of Transportation decides such exemption is in the public interest and will not adversely affect safety.

Passage of this measure may provide a clue to the prevailing Congressional mood. Hours-of-service was one of the real oldtimers of proposed rail legislation. In 1969, however, it moved effortlessly.

The hours-of-service measure got its first push in the House. Representatives voted for the measure over a month before Senators got around to it. This is a reversal of what has happened with other rail issues. In all cases, the Senate has moved rapidly—more so than anyone can remember—on pending rail legislation. Thus, the scene is shifting quickly to the House for the next action.

Before Christmas, the Senate passed bills on safety and transit. A bill on passenger service was put into tentative form for reporting to the floor for a vote. Bills on taxes and legal fees already are awaiting final vote.

Generally speaking, the passenger, taxation and transit bills, as now worded, could be classified as fair-to-good for railroads. The legal fees bill is acceptable. The safety bill is bad.

The House still must hold hearings on all of these measures except the passenger bill. In both Senate and House however, extra hearings may be needed for passenger proposals expected from the White House any day.

Railroad lobbyists still have time to work among House lawmakers. They have *some* time to work among Senators, to change or to promote legislation still undecided.

Precisely what the industry's Washington men will do in the next few weeks can't or won't be known until after it's all over. One thing, however, seems clear—they'll be busy. They seem to agree that this is the session of all sessions, as far as rail laws are concerned.

● **Coming to a climax.** "There is more urgency about rail matters than I've seen in any previous Congress," says a registered rail lobbyist who came

Some key men to watch in Washington

What the Federal government does (or doesn't) do for railroads in 1970 will be importantly influenced by what is recommended by DOT Secretary Volpe—and how these recommendations fare under scrutiny of the Bureau of the Budget. After that, it's up to such Congressional leaders as Senator Magnuson, chairman of the Senate Commerce Committee, and his House counterpart, Rep. Harley Staggers of West Virginia (not pictured).

DOT Secretary John A. Volpe

Budget Director Robert P. Mayo

Senator Warren Magnuson (D.-Wash.)

Freight and Passenger Car Charts

These charts are very helpful to AAR billing clerks, mechanical engineers, purchasing and stores personnel, car inspectors, write-up men, car foremen, and anyone else who needs a knowledge of car parts and their relation to each other.

The charts include a cutaway diagram of the car and a listing of important parts with arrows showing where the part is located. These charts are used in our apprentice technical training program for the carman craft.

$2 each

if you are not satisfied

YOUR MONEY WILL BE REFUNDED

if you return the charts to us within 30 days

THE RAILWAY EDUCATIONAL BUREAU
1809 CAPITOL AVENUE
OMAHA, NEBRASKA 68102

Please send the charts I have checked below. If I am not satisfied I will return the charts within 30 days for a full refund. I enclose a check or money order for $2.00 for each chart.

- ☐ Gondola Car, Modern design (23x27 inches)
- ☐ Mechanical Refrigerator Car, Modern design (18x22 inches)
- ☐ Box Car, AAR Standard 40 ft. (23-29 inches)
- ☐ Covered Hopper Car (22x30 inches)
- ☐ Tank Car, I.C.C. 103-W. (23x35 inches)
- ☐ Passenger Car, Light-weight, streamlined (23x35 inches)
- ☐ Passenger Car, Air conditioned, chair (18x35 inches)

1"70

Name .....

Address .....

City ..... State .....

Job ..... RR .....

Circle 36 on coupon page 90

to Washington during the 81st Congress (1949-50). "The things talked about for years and years all are coming to a climax this year," he adds.

The two House lawmakers with the immediate responsibility for measures handed over by the Senate are Harley O. Staggers (D.-W. Va.), chairman of Interstate and Foreign Commerce Committee and Samuel N. Friedel (D.-Md.), chairman of the subcommittee on transportation and aeronautics. The subcommittee has the first move. It must hold hearings and produce a draft bill for the parent commerce committee to vote on—before the measure goes to the House floor for final action.

Like all members of the House, both men must run for re-election in November. Well-ensconced as a committee chairman, the veteran Staggers apparently faces no great fight. Known as a labor man, he is credited with the success of the hours-of-service bill in the House. Safety will be one of Staggers' interests.

Friedel appears less secure. With a district in the nation's densest passenger corridor, he may find passenger and mass transit proposals—as well as the safety issue—important elements of his campaign.

The comparable figures in the Senate are Warren G. Magnuson (D-Wash.), chairman of the Senate Commerce Committee, and Vance Hartke (D.-Ind.), chairman of the subcommittee on surface transportation.

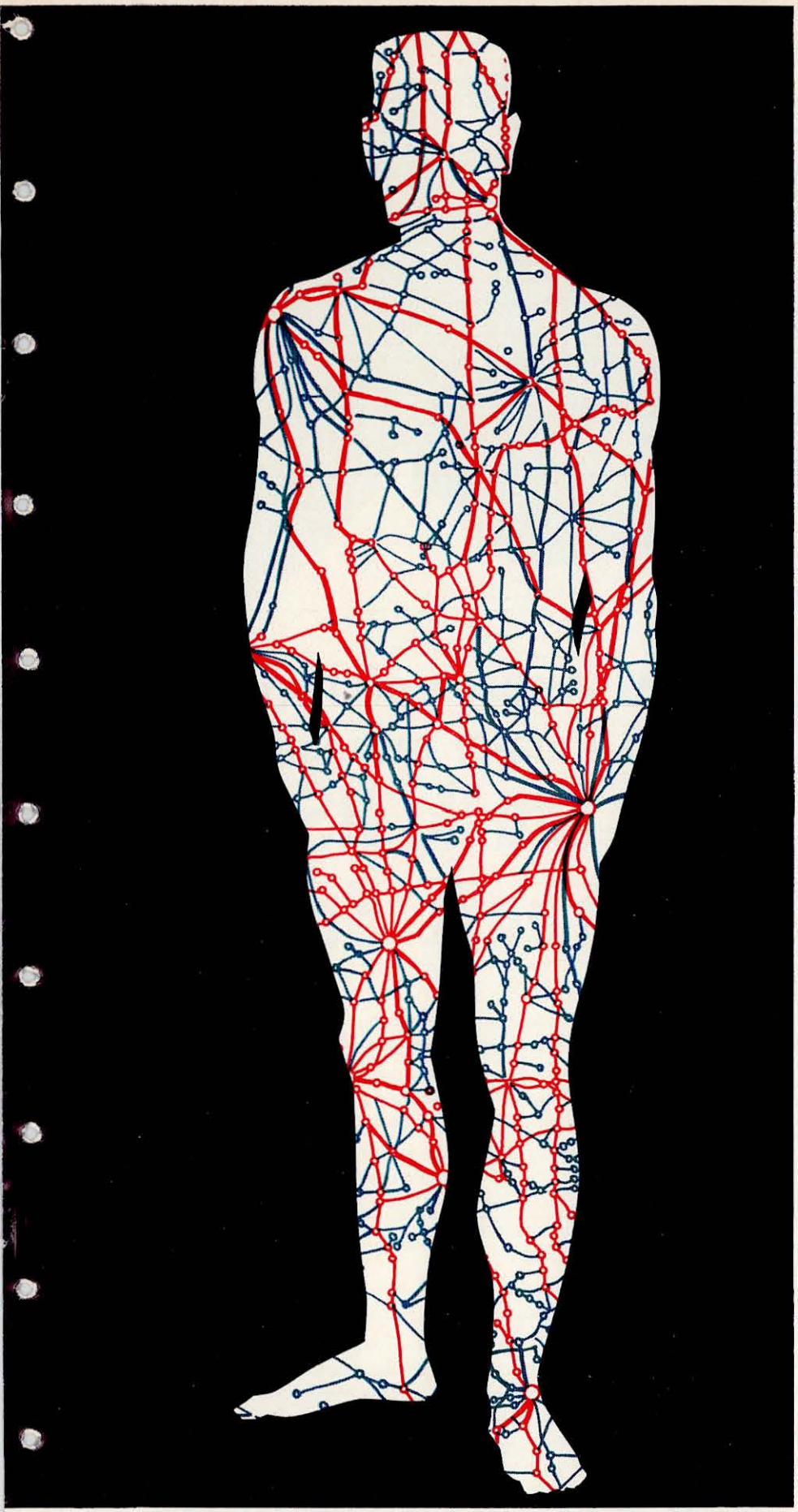
Lately, Magnuson has pushed harder on rail matters than observers can remember. Politics, however, would not be an immediate factor, because the Senator from the State of Washington doesn't have to run again until 1972. His push may be the result rather of frustration, as he has put it, built up in his 25 years of confronting transportation problems on Capitol Hill.

Hartke is in a different situation. The Indiana legislator apparently is in trouble, and re-election may not come easy. Rail safety, and passenger service to a lesser degree, could be big issues for a Senator from a state cobwebbed with railroad tracks—and a state that in recent years has witnessed major, town-evacuating derailments involving lethal materials.

Other Commerce committee members up for re-election this year include: Democrats Pastore of Rhode Island, Hart of Michigan, Cannon of Nevada, and Tydings of Maryland; and Republicans Scott of Pennsylvania (Senate minority leader), Prouty of Vermont, and Goodell of New York.

● **DOT power expanded.** As for the bills themselves, the three big ones—passenger, safety, transit — involve Transportation Department relation-

SO YOU KNOW US BETTER



WE'VE GOT TRANSPORTATION IN OUR SYSTEM

Vapor Corporation
is proud to be a leading supplier
of specialized controls and equipment
for the rail and transit industry.

Transportation
has always been in our system.
And now,
we've even got systems in our system.
Vapor today is more systems oriented.
Applying its systems approach
to new areas of public transportation.
Bringing you tomorrow's products today.

To remind you of our broader,
more complete capabilities
we've changed our division name to
TRANSPORTATION
SYSTEMS DIVISION

From now on we're serving you
as the Transportation Systems Division
of Vapor Corporation,
6420 West Howard Street,
Chicago, Illinois 60648

SINGER

TRANSPORTATION EQUIPMENT

Vapor Corporation

VAPOR CORPORATION PRODUCTS AND SYSTEMS: DOR-TROL* AUTOMATIC DOOR OPERATORS AND CONTROL EQUIPMENT; SPEED-LOG* SPEED INDICATION AND PACE SETTER* CONTROL SYSTEMS; MERC* THERMOSTATS AND ENVIRONMENTAL CONTROL SYSTEMS; ALERTOR* ELECTRONIC ALERTNESS CONTROL; SNO GARD* AUTOMATIC SWITCH HEATER SYSTEMS; ELECTRIC AND ELECTRONIC CONTROL SYSTEMS; HEAVY DUTY RELAYS AND CONTACTORS; VOLTAGE INVERTERS AND CONVERTERS.
*TRADEMARKS VAPOR CORPORATION, THE SINGER COMPANY

Circle 20 on coupon page 90

Now in successful operation on 10 major railroads–

Stucki HS-3 Hydraulic Snubber

Five years of engineering development, backed by field tests on main line and test track on various railroads has produced the most significant advance in freight car suspension—the Stucki HS-3 Hydraulic Snubber. It virtually eliminates wheel lifts at all speeds. Located between the top of the bolster and the upper chord of the side frame, this hydraulic snubber reduces weight shift and damaging high loads by absorbing the spring rebound energy. The spring nest is unaltered, so that it acts in its normal cushioning manner.

The Stucki HS-3 snubber is completely confined within the truck—nothing protrudes to be damaged in service. Designed and built to give years of maintenance-free service by A. Stucki Company, manufacturer of quality equipment for railroads since 1911. Brochure giving full description with typical results from tests with various types of suspensions sent on request.

Dramatic Advance in Freight Car Suspension

- Controls lateral rocking with hydraulics
- Reduces weight shift on bolster
- Reduces high loads on truck and track
- Improves tracking ability on rough track at all speeds

A. STUCKI COMPANY

OLIVER BUILDING, PITTSBURGH, PENNSYLVANIA 15222 ☐ 412-281-1570

Circle 26 on coupon page 90

WILL AN ACCEPTABLE PASSENGER-TRAIN FORMULA EMERGE?

ships with the rail industry. Passenger and safety proposals would involve an operational relationship. DOT control in these areas would be expanded. Transit would involve a financial relationship. DOT aid would be expanded.

● **Passenger question hottest.** At the top in terms of immediate concern is the passenger question, which has been boiled down to this: *Where* must intercity passenger service be preserved; *what* kind of service will be workable; and *how* will that service be financed.

These questions got a thorough probe during the first session. The House held nearly two weeks of hearings. The Senate not only held hearings, it has a bill drafted and may be in a position to vote on that bill any day. Here, however, the White House is expected to intervene almost any day now. The Senate may hold up on its bill while it considers the Administration proposals—in an effort to report out one "clean" passenger bill.

The hassle will come over financing. There seems to be agreement that something must be done about the passenger situation. But there could be much argument over the necessary money support.

First, consider the Senate bill. It would "provide financial assistance for and establishment of a national rail passenger system, to provide for the modernization of railroad passenger equipment, to authorize the prescribing of minimum standards for railroad passenger service . . ."

Although the standards would be left to Interstate Commerce Commission enforcement, the DOT secretary would get the control most important to rail men—the power to decide who must run the trains and how much money they should get to do it.

Provisions of the Senate bill, as they appear now, are not entirely unfavorable to the rail industry.

Earlier, the proposal was for a Federal payment of 75% of the money lost by any railroad required to run passenger trains. Then there was talk of raising the amount to 80%. Now, language may be written in that, in effect, could allow a 100% indemnification. The Secretary would be authorized to make "just and reasonable compensation."

The Senate proposal also includes an "operating fund" for (1) purchase and rehabilitation of existing equipment and purchase of new equipment, (2) servicing, maintenance and repair of esuipment, (3) purchase of lease of needed office and warehouse space and of materials and supplies, (4) coverage of "salaries, wages, and related retirement and other employee benefit contributions."

The bill would give the Secretary the financial and administrative control of a national passenger network. He would lease equipment to railroads or regional agencies.

For fiscal 1971, the bill would provide $15 million for the operating fund. For each of the following three years, there would be an authorization of $60 million.

The White House plan

The Administration's approach is expected to be quite different. From what could be pieced together last week, the White House plan was shaping up like this:

A quasi-public corporation, called Railpax, would be created to operate trains designated as "essential." Railpax would start with an initial $100 million, most of which would be raised through government-guaranteed loans. About $60 million of this would go for equipment rehabilitation, the remainder being earmarked for start-up costs, promotion and R&D. Railroads participating in Railpax would contribute one-half of their fully allocated passenger losses for 1969—or about $200 million if all agree to participate. (Railroads not in Railpax would still be required to operate "essential" trains.)

Railpax would assume ownership of passenger equipment. The railroads would operate the equipment under contract with Railpax.

Railpax would function as a private corporation, except that its board of directors would be named by the White House. Directors would represent both political and industry interests. Management, however, would be sought from professional transport sources. Emphasis would be on making revenues pay for operations. Promotion would be critical. For this, $3 million to $4 million might be provided.

Railroads would have to bolster Railpax funds by contributing a percentage, perhaps half, of the losses they would have sustained in operating passenger trains other than those defined as "necessary."

● **Rails face safety fight.** The outlook for acceptable safety legislation is, at the start of the second session, considerably dim, from a rail viewpoint. The House proceedings—hearings must be held—will give rail men one last chance to block safety laws, or at least get them changed.

The Federal Railroad Safety Act (including a Hazardous Materials Transportation Control Act) passed by the Senate right before Christmas ignored proposals of a DOT task force on rail safety. (Rails had supported the task force report.)

The major discrepancy between the Senate bill and the rail-endorsed DOT proposal came in relation to repeal of state laws. The DOT bill would have repealed all state laws affecting rail operations, and it would have given the Secretary full jurisdiction. The Senate bill, however, would let state laws stand until and if a Federal law on the same matter is made public. Also, before and/or after Federal laws move in, states can act as the immediate administrators, through certification showing they have a proper agency and that the agency is enforcing new or old Federal measures. Only for rolling stock and employee qualifications would the Secretary retain full power to assess and compromise penalties. The Senate bill also allows states to adopt laws stronger than Federal regulations, to meet "local" hazards.

Another difference is that the Senate bill exempts prescription of employee qualifications from DOT control, while the task force said employees should be under full DOT jurisdiction.

W. Graham Claytor, Southern president, in a recent Washington Post interview, called the bill "perfectly terrible." Safety enforcement, under Senate proposals, would be too fractured to provide the uniform, effective safety controls that are needed in a nationwide rail system, Claytor said.

Here again, there may be a clue to the outcome of legislation in this Congress. The Senate bill went its way over the objection of the Transportation Department. Here as with the passenger bill, there is always the possibility of a White House veto.

● **House ready for transit.** Also just before the holiday recess, the Senate approved a $10-billion transit bill that represents a compromise between Senate and White House ideas on transit financing. The political importance of this bill is clear.

● **Unfair taxes dealt with.** The Senate Commerce Committee has approved a bill aimed at eliminating state or local taxes that discriminate against carriers. The proposal would make it unlawful for any taxing district to assess carrier property at a ratio to true market value higher than that for other property in the same jurisdiction.

In the last nine years alone, railroads claim they have been assessed more than $900 million in "discriminatory" taxes.

The Senate Commerce Committee

(Continued on page 89)

1969 REVIEW

By Burton N. Behling, Vice President, Economics and Finance Department, Association of American Railroads, Washington, D.C. 20036

Advances despite adversity

Strong advances were made by the railroads on several fronts in 1969 despite the disruptive impact of continuing inflationary pressures on costs.

In important respects the year was a mirror of developments in 1968 as new records again were set in both freight traffic and revenues. Significant progress also was made in expanding unit-train operations and otherwise improving freight services. A new generation of high-speed passenger trains was introduced along the East Coast between Washington-New York and New York-Boston.

Passenger traffic in general continued to decline, however, and losses incurred in many passenger-train operations remained as an urgent problem. Although it was increasingly recognized that railroads do not have the financial ability to continue absorbing these heavy losses, proposed legislation to provide government reimbursement of losses on passenger trains required by government order to be operated has not yet been enacted by the Congress.

Eroded by inflation in every important category of costs, railroad net earnings were again at a low level in 1969. Without the help provided from general rate increases authorized by the Interstate Commerce Commission the financial situation would have become desperate. Effective Nov. 18, the Commission approved on an interim basis, subject to further investigation in certain respects, a 6% general freight rate increase.

Emphasizing the need for this and earlier rate adjustments authorized in 1967 and 1968, which served partially to offset rapid cost escalations, net ordinary income in 1969 is expected to show little change from the revised total of $569 million in 1968, even with record freight traffic and revenues and some improvement in net operating income.

Despite low earnings, shortage of funds and very high interest rates, railroads managed to increase their capital expenditures in 1969 to more than $1.4 billion from $1.2 billion in 1968. While this was a real achievement under the severe circumstances that presently exist, such level of capital expenditures is far short of adequate considering the massive needs for improvement of railroad facilities and in view of the diminished purchasing power of the dollar as compared with earlier periods.

As in prior years, most of the railroad capital expenditures in 1969 went for equipment. Together, the railroads and private car companies ordered more than 80,000 new and rebuilt freight cars during the year, compared with 72,000 in 1968.

Other developments, also, are contributing to the improvement of freight service. TRAIN (TeleRail Automated Information Network), which is expected to be fully operational in the new year, is designed to improve freight car utilization by providing more immediate information on flows of freight cars, enabling the carriers to better control car movements and to respond more quickly to demands for cars. Also, about two-thirds of the 1.8 million freight cars now have ACI labels attached, and this program is scheduled for completion by June 1, 1970. ACI is a system of car identification using color-coded strips that can be read by track-side scanners.

These and other events in 1969 are reviewed in following sections of this report. The year certainly has had difficulties as well as accomplishments, for the railroads no less than for the nation.

As for 1970, the outlook is uncertain and is particularly cloudy with respect to railroad earnings. Further substantial escalations of costs are ahead, and without further prompt help from rate adjustments, maintenance of even the present low level of railroad earnings is not to be expected. A further consideration is that as measures to restrain inflation, so essential to the nation's welfare, take hold some slowdown in economic activity and perhaps in rail freight traffic may occur. At this point, then, it seems reasonable to expect little or no increase in rail freight traffic over the next 6 to 12 months and an actual decline of modest proportions is not beyond possibility.

Looking further ahead, beyond the measures that must be applied and sustained to gradually bring inflation and inflationary expectations under control, the outlook for railroads in the '70's remains favorable and challenging. The immediate problem, in the interim period of the next year or two, will be to keep the financial health of railroads from further impairment and indeed to improve their viability, in order that they may be ready with fully effective potential to meet the Nation's increasing demands upon them in the future.

Financial results

Returns for the final quarter of 1969 are expected to show that freight rate increases authorized by the Interstate Commerce Commission in Ex Parte 262 effective November 18, together with a sustained high level of freight traffic, provided a small margin of improvement in net railway operating income for the year as a whole. Net earnings from operations in the first nine months had failed to recover from the relatively low earnings of 1968, as escalating costs continued to consume revenues from earlier freight rate increases.

For the 12 months ended Sept. 30, 1969—a period which reflected almost a full 12-months effect of the 1968 rate increase authorizations in Ex Parte No. 259—net operating income of the Class I railroads amounted to $677 million, providing a rate of return of only 2.45% on a net investment base of $27.6 billion. These results were almost exactly equal to those of calendar years 1967 and 1968—ignoring the declining value of the dollar—and thus remained more than one-third below net earnings in 1966, when the current steep rise in unit costs began. For calendar 1969 net operating income is estimated at about $730 million and the rate of return on investment about 2.6%. Ordinary net come for 1969, after taking account of income from other than railroad operations and paying interest on debt and other fixed charges, is expected to show little change from 1968's (revised) total of $569 million. Net income in a range from $567 million to $584 million would represent a return of 3.2% on shareowners' equity (net worth) of $18 billion, leaving railroads far below the comparable earnings rates of other industries. As compared with the railroads' 3.2%, return on net worth in 1969 averaged more than 13% for manufacturing corporations and about 11% for public utilities.

Railroad gross revenues exceeded $11 billion for the first time in 1969, as record freight volume and increased rates and fares more than offset declines in volume of passenger train traffic. The year's total of about $11.4 billion was up more than 5% over the 1968 total, and included record freight revenue of $10.3 billion, up 6% from 1968. Passenger revenue declined moderately,

Table 1: Rate of Return and Net Income—1959-1969

Year	Net railway operating income (millions)	Rate of return on investment after depreciation	Net income after fixed charges* (millions)
1959	$ 748	2.72%	$578
1960	584	2.13	445
1961	538	1.97	382
1962	726	2.74	571
1963	806	3.12	652
1964	818	3.16	698
1965	962	3.69	815
1966	1,046	3.90	904
1967	676	2.46	554
1968	678	2.44	569[r]
12 mos. to 9/30/69	677	2.45	559[r]
Year 1969 estimated	730	2.6	575

[r]—Revised.
* Ordinary income before extraordinary and prior period charges and credits.
Note: Statistics shown above and elsewhere in this Review are for Class I line-haul railroads unless otherwise indicated.

Table 2: Condensed Income Account—1966, 1968 and 1969

	1966 (millions)	1968 (millions)	12 mos. to 9/30/69 (millions)	Year 1969 estimated (millions)
Total operating revenues	$10,655	$10,855	$11,274	$11,425
Total operating expenses	8,118	8,581	8,895	8,970
Taxes	968	946	1,011	1,025
Rents (net debit)	523	650	690	700
Total expenses, rents and taxes, excl. Fed. Inc. taxes	9,422	10,111	10,498	10,595
Ratio to revenues	88.4%	93.1%	93.1%	92.7%
Net railway operating income	$1,046	$678	$677	$730
Net income (ordinary)	904	569[r]	559[r]	575

[r]—Revised.

Table 3: Operating Revenues—1966, 1968 and 1969

	1966 (millions)	1968 (millions)	12 mos. to 9/30/69 (millions)	Year 1969 estimated (millions)
Freight	$ 9,281	$ 9,750	$10,164	$10,325
Passenger	544	444	439	438
Mail	304	195	183	178
Express	67	44	33	28
All other	459	421	455	456
Total	10,655	10,855	11,274	11,425

Table 4: Operating Expenses—1966, 1968 and 1969

	1966 (millions)	1968 (millions)	12 mos. to 9/30/69 (millions)	Year 1969 estimated (millions)
Maintenance of way	$ 1,304	$ 1,405	$ 1,475	$ 1,490
Maintenance of equipment	1,844	1,914	1,958	1,965
Transportation	4,139	4,355	4,512	4,555
Traffic, general and other	831	907	950	960
Total	8,118	8,581	8,895	8,970

Table 5: Railway Tax Accruals—1966, 1968 and 1969

	1966 (millions)	1968 (millions)	12 mos. to 9/30/69 (millions)	Year 1969 estimated (millions)
Payroll taxes	$ 439	$ 513	$ 528	$ 530
Federal income taxes	186	66	98	100
All other taxes	343	368	385	395
Total taxes	968	946	1,011	1,025

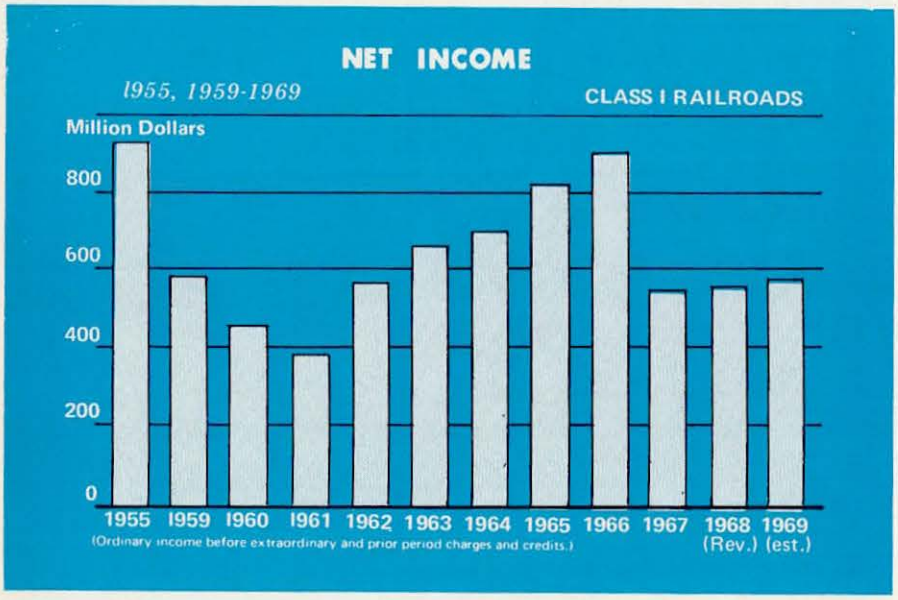
cushioned by fare increases; mail and express revenues fell more sharply. Other revenues, including those from switching, demurrage and other miscellaneous sources, registered an increase.

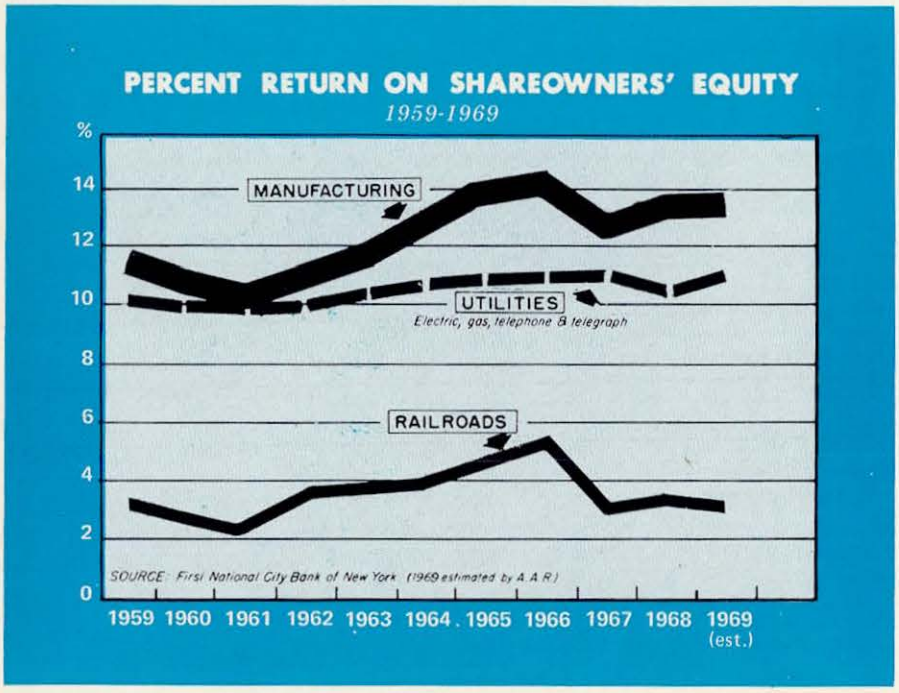
All principal groups of operating expense accounts increased in 1969 over 1968, with maintenance and transportation expenses each up 4 to 5%. Labor costs, including wage expenses, health and welfare benefits and payroll taxes, again consumed more than one-half of total operating revenues, and accounted for nearly 60% of cash expenses, rents and taxes, exclusive of Federal income taxes.

Equipment rents continued upward, rising to an estimated $660 million in 1969 from $610 million in 1968 and $536 million in 1967. Equipment rents have increased by nearly $400 million in ten years, reflecting a variety of causes, including higher mileage allowances paid owners of private cars, rental of trailers used in piggyback service and, perhaps most notably, resort to leasing of equipment in lieu of ownership.

All principal categories of railroad taxes increased in 1969 over 1968. Payroll taxes rose to an estimated $530 million from $513 million in 1968, despite a 2% reduction in employment, owing to an increase in the tax rate for Railroad Retirement from 8.3% to 8.95% effective Jan. 1, 1969. An increase in Federal income taxes from $66 million to about $100 million was apparently attributable both to greater taxable earnings and fewer usable tax credits than in the previous year. An increase in other taxes to an estimated $395 million from $368 million in 1968 reflects a continuing upward trend in the state and local taxes, principally property taxes, which burden railroads so much more heavily than they do the railroads' chief competitors.

Looking ahead, the developing wage pattern and accelerating material price increases assure continuation of a cost/price squeeze on railroad earnings in 1970.





Capital expenditures

Expenditures for new rolling stock and other betterments approximated $1.43 billion in 1969, up 20% over 1968—a remarkable industry effort in the face of the continuing cost squeeze on earnings and soaring interest rates. Moneys expended for materials and supplies also increased in 1969.

Over the past ten year, the Class I railroads have invested more than $12.5 billion in plant and equipment modernization. Of the estimated $1.43 billion spent last year, approximately $1.02 billion represents outlays for new and rebuilt freight cars and locomotives, with the other $410 million going for improvement of roadway facilities. The equipment expenditure represents a 25% increase over the $819 million invested in rolling stock in 1968. The projected $410 million for roadway betterment is $42 million higher than the comparable figure for the previous year, disregarding price change. In this connection, it is significant to note that 1969's capital expenditures of $1.43 billion were worth only $1.04 billion, or 27% less, in terms of 1955 dollars.

As reported capital expenditures include only amounts charged to the investment accounts of Class I railroads, it is necessary to add $600 million or more to the reported figure to bring the total modernization picture into focus. In addition to owned equipment, railroads in 1968 acquired some $300 million worth of equipment under leasing arrangements, and the corresponding 1969 amount is expected to be even greater. Well over $300 million was also spent by so-called "private" car owners, including railroad subsidiaries such as Trailer Train and the railroad-controlled refrigerator car companies. Including such spending by others, total improvement outlays in 1969 approximated $2 billion.

Capital spending in 1970 will be in-

fluenced by many factors contributing to determination of spending needs on the one hand and ability to spend on the other. Cancellation of the investment tax credit under terms of the 1969 Tax Reform Act will be a deterrent, but new provisions for accelerated amortization of equipment will help to fill that gap so far as rolling stock is concerned. Tight supplies of freight cars and locomotives provide incentives both to attain more effective use of present fleets and to add to them, while shortages of funds and high cost of borrowing make better handling more attractive than greater spending.

While the results must be regarded as tentative, a special survey conducted by ICC in November and December indicated that railroads plan to spend 7% more for new plant and equipment in 1970 than they did in 1969. The survey was completed, however, before railroads knew the outcome of such important matters as the Tax Reform Bill, wage negotiations still to be resolved, or further unknown rate adjustments.

● **Purchases.** Reflecting a higher level of operations—up between 1 and 2% in terms of gross ton-miles—a higher price level, and little change in inventories, railroad purchases of fuel, material and supplies approximated $1.6 billion in 1969, up about 4% over the previous year. As suggested by the footnote to Table 6, the purchases data are somewhat understated in that they do not include materials applied by contractors, nor do they include the cost of other materials not processed through the stock accounts. The total cost of fuel, material and supplies as reflected in the operating expense accounts for 1969 will exceed $2 billion, consuming about one-fifth of rail revenues.

Technology

Railroads continued in 1969 to seek greater efficiency, economy and improved service to shippers through application of modern technology and management information systems.

Unit train operations were expanded to apply to additional commodities moving in requisite volumes, including such freight as sulfuric acid, potatoes, and grain. Interest in containerization continued, including especially the use of containers in rail-water intermodal movements.

● **Equipment inovations.** Special cars continue to be developed to meet particular needs of shippers. A new "Tater Frater," capable of handling two and one-half conventional carloads of potatoes, was placed in service in 1969. An experimental coal hopper with greatly increased net-to-tare ratio was introduced. A large flat car was designed specifically for handling "land bridge" traffic, and all-purpose flat cars capable of handling containers, piggyback trailers, or conventional flat car loads were placed in service.

As chemical products moving by rail increase in number and sophistication, additional special tank car equipment is required. One such car has an insulated tank carrying 27,800 gallons that operates on two span bolsters having four axles at each end of the car. Another of similar design and 47,400-gallon capacity was built for handling methanol.

While hotbox performance has reached a plateau, application of roller bearings continues to grow. Almost all new cars installed and more than one-fourth of all freight cars in service have roller bearings. New longitudinal cushioning devices were introduced in 1969. Hydraulic, elastomeric and friction snubbing devices have been developed for use where vertical and lateral loading affect ride performance.

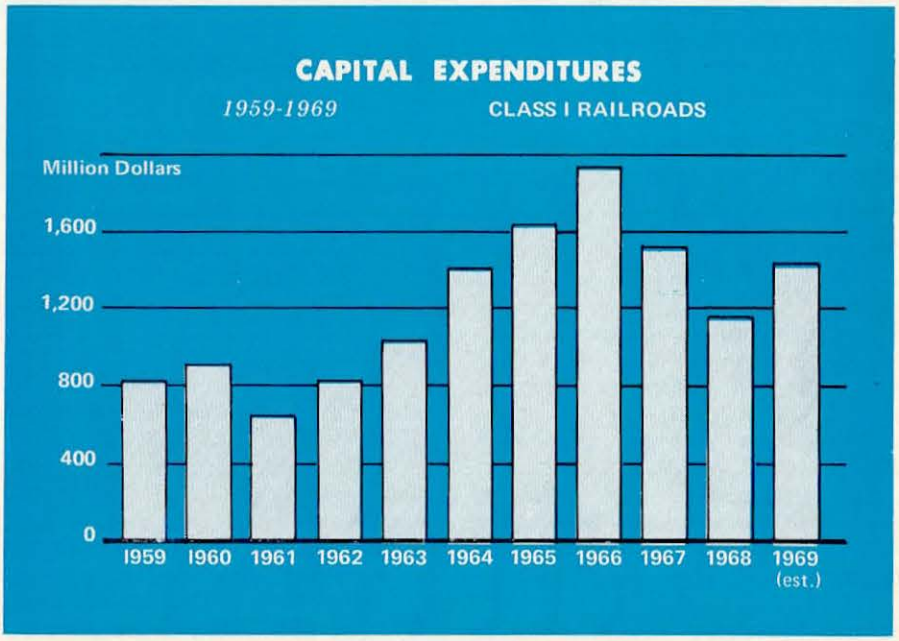
Locomotive developments included introduction of a 6,600-horsepower diesel-electric, the largest single-unit locomotive yet designed, and a more versatile 2,300-horsepower unit.

Advances in technology of electrification continue to draw attention. A Department of Transportation research project involves application of a linear induction motor for operating trains at speeds up to 300 miles per hour. In this system, thrust is obtained by a reaction rail placed midway between the

Table 6: Capital Expenditures and Purchases—1959-1969

Year	Gross capital expenditures: Rolling stock (millions)	Gross capital expenditures: Other facilities (millions)	Gross capital expenditures: Total (millions)	Purchases of fuel, material and supplies (millions)
1959	$ 568	$250	$ 818	$1,430
1960	633	286	919	1,463
1961	427	219	646	1,262
1962	593	240	833	1,311
1963	785	259	1,044	1,401
1964	1,140	278	1,417	1,476
1965	1,304	327	1,631	1,498
1966	1,554	399	1,953	1,605
1967	1,148	374	1,522	1,591
1968	819	368	1,187	1,534
1969 (est.)	1,020	410	1,430	1,600

Note: Capital expenditures of Class I railroads do not include expenditures for railroad equipment made by private car companies and lessors. Purchases do not include materials applied by contractors or which otherwise bypass the material and supplies account. (See text.)



running rails, so that wheels of the equipment do not require adhesion for propulsion.

● **Track improvements.** In track research, evaluations continue on new types of rail. Studies are in progress to determine whether vacuum degassed rail, which may have a cost advantage over control cooled rail, will perform as well. Studies were begun on continuously-cast rail and continued on hardened rail in curved track.

New types of concrete ties were introduced in 1969, and new clips and fastening devices are under study by AAR's Research Department.

Field welding of rail continues to make headway as new processes are developed and older processes are refined. An ultrasonic inspection technique was studied during 1969 in which the "noises" emitted from cooling welds are received by a crystal placed on the rail adjacent to the weld, and an ultrasonic "fingerprint" is produced that indicates weld quality.

The action of railroad track under sun heat received careful study during the year, including ballasting, the resistance of ties moving laterally through ballast, impressive forces developed in rails subject to load and rail anchorage requirements.

Several new designs of track maintenance equipment providing more uniform results as well as greater productivity of manpower were introduced during 1969. These machines include tampers, track liners, ballast machines and other advanced types of roadway machines.

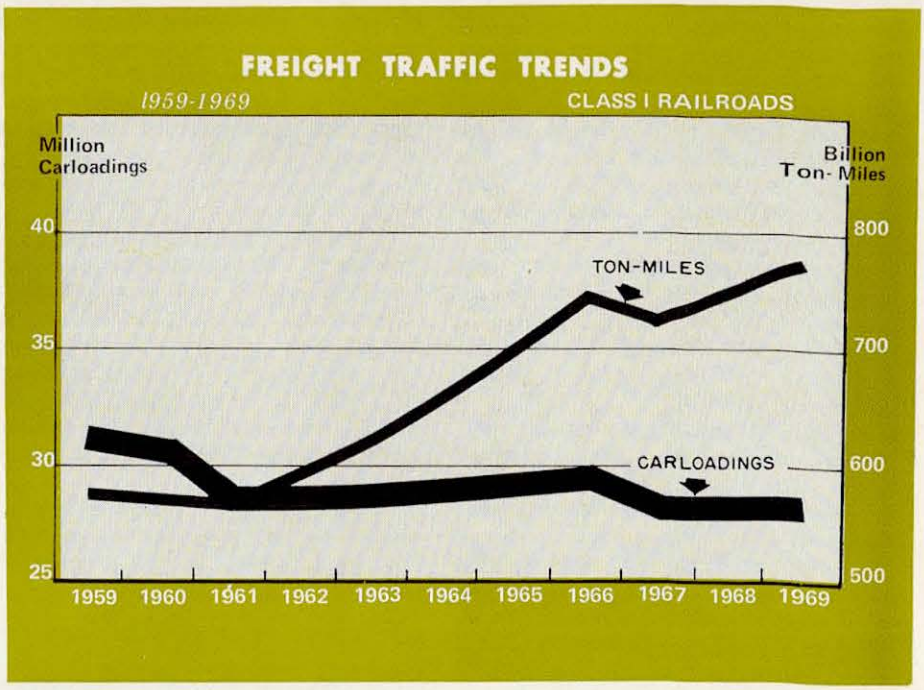
Photoelectric technology has been applied to detection of overhanging and shifted loads by placing photo cells and light sources at trackside. This concept of observation is particularly useful at the entrance of tunnels and bridges or where clearances are severely restricted.

● **Information systems.** Major industry programs for automation of freight car distribution information continue to advance. Thirty-three Automatic Car Identification (ACI) systems have been installed on North American railroads. Nearly 200 are scheduled for installation during the year 1970. Approximately two-thirds of the cars in interchange service have had labels applied with the multi-colored retroreflective strips. The effective date for having all cars labeled has been extended to June 1, 1970.

Data transmission regarding cars interchanged between railroads began during 1969, and full implementation of the program is set for the first quarter of 1970. Built around the computer at AAR's Washington Headquarters, this project is known as TRAIN (TeleRail Automated Information Network). The system is expected to improve freight car utilization by providing more timely and accurate information on car supply and car flow, allowing the industry to better direct car movements and more quickly respond to car demands.

UMLER, the Universal Machine Language Equipment Register, has been operational in 1969 and, through the concentrated efforts of the railroads and other car owners, is fast becoming a reliable source of information about American and Canadian freight cars. Six railroads have incorporated the UMLER file in their management information systems and at least six more will do so early in 1970. The file is being used for developing per diem and mileage data and is expected to provide required information for publication in the Official Railway Equipment Register.

Most major railroads are now participating in a program for simplification of interline per diem settlements through use of the AAR Data Center as an information clearing house. Monthly summary records involving



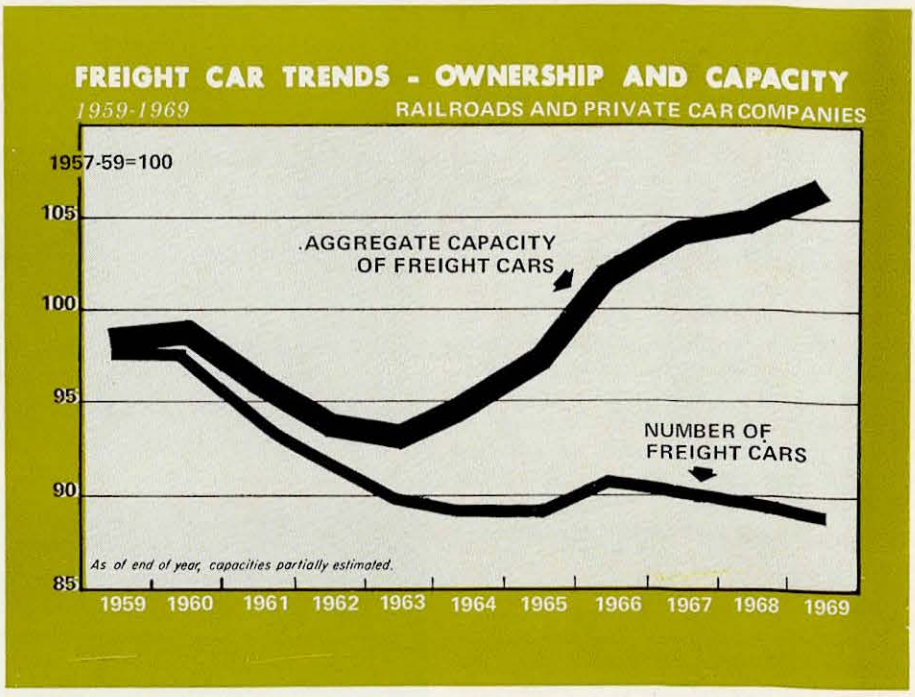


Table 7: Freight and Passenger Traffic—1959-1969

Year	Revenue carloadings (thousands)	Piggyback carloadings (thousands)	Revenue ton-miles (millions)	Revenue passenger-miles (millions)
1959	31,015	417	575,529	22,047
1960	30,441	554	572,309	21,258
1961	28,590	591	563,361	20,283
1962	28,722	706	592,862	19,902
1963	28,871	797	621,737	18,494
1964	29,027	891	658,639	18,245
1965	29,248	1,034	697,878	17,378
1966	29,623	1,163	738,395	17,085
1967	28,084	1,207	719,498	15,193
1968	28,253	1,337	744,023	13,110
1969	28,292	1,344	e767,000	e12,120

e—Estimated

Note: Piggyback carloadings shown above do not include mail and express, of which 195,674 piggyback carloadings were handled in 1969.

Table 8: Carloadings—1969*

Commodity groups	Carloadings in 1969 (thousands)	Percent of total
Grain	1,284	4.5
Other farm products	901	3.2
Metallic ores	2,021	7.2
Coal	5,129	18.1
Crushed stone, gravel and sand	1,531	5.4
Nonmetallic minerals	544	1.9
Grain mill products	1,045	3.7
Food and kindred products	1,269	4.5
Primary forest products	1,269	4.5
Lumber and wood products except furniture	801	2.8
Pulp, paper and allied products	1,279	4.5
Chemicals and allied products	1,498	5.3
Petroleum products	597	2.1
Stone, clay and glass products	1,100	3.9
Coke	434	1.5
Metals and products	1,491	5.3
Motor vehicles and equipment	1,175	4.2
Waste and scrap materials	763	2.7
Forwarder and shipper association traffic	380	1.4
All other carloads	3,686	13.0
Merchandise, LCL	96	.3
Total carloadings	28,292	100.0
TOFC (piggyback) included above	1,344	4.8

* Comparable data by commodity groups not available for 1968.

other participating roads are submitted on magnetic tape for consolidation and sorting by the Data Center. Each road then receives in return a tape containing data of other roads required for per diem settlement. The exchange program produces substantial savings in card punching, mailing expense and computer time. More than 1,300,000 records are being processed monthly.

In addition to these industry-wide advances, individual railroads also are moving ahead with comprehensive management information programs geared to their own system operations and decision making.

Traffic trends

The story of rail traffic trends in 1969 was a virtual carbon copy of the preceding year. Previous record highs in revenue ton-miles and piggyback loadings were again topped, but intercity passenger traffic continued its steady regression as modest gains in commutation traffic were more than offset by losses in intercity travel.

As shown in Table 7, revenue ton-miles in 1969 approximated 767 billion, a 3.1% increase over 1968, while revenue carloadings rose only a fraction of one percent to a total of 28,291,939.

The greater relative increase in ton-miles is indicative of continuing trends toward heavier loads in higher-capacity cars and a somewhat longer average haul. During the last decade, the average number of ton-miles produced for each car of revenue freight loaded has increased by 46%, from 18,557 in 1959 to about 27,100 in 1969, including a 3% rise last year. Although the virtual disappearance of LCL traffic is a contributing factor, the increase in ton-miles per car loaded is basically a product of incentive rates and a shift to larger equipment.

The AAR's Car Service Division in 1969 introduced a new format for reporting weekly carloadings. The revised form, which provides a breakdown of loadings into 21 commodity groups compared with only eight classes on the old basis, has greatly enhanced the value of this half-century-old report as a barometer of rail freight traffic trends. Carloadings of 1969 on the revised basis are shown in Table 8. The new form will become even more useful in 1970 with the availability of comparable data by commodity classes for the previous year.

After recording an average annual growth rate of nearly 11% over the previous five years, piggyback freight loadings in 1969 leveled off at 1,343,123 revenue cars, less than 1% above the 1968 figure. The 1,344,123 cars carried 2,215,547 trailers or containers, up 1.9% over the preceding year. The average number of trailers or containers per revenue load remained at 1.6 units.

The apparent levelling off of piggyback freight was generally attributed to adjustment of services and facilities as a result of economic analysis, and to changes in reporting methods instituted in 1969.

In addition to the freight loadings, railroads reported 195,674 piggyback cars carrying 282,039 trailers and containers of mail and express. Compared with 1968, these totals represent increases of 13% in cars and 15% in trailers and containers in mail and express service.

The total rail movement in piggyback service in 1969, including nonrevenue handling of empties, amounted to 3,487,668 trailers or containers, up 2% from 1968.

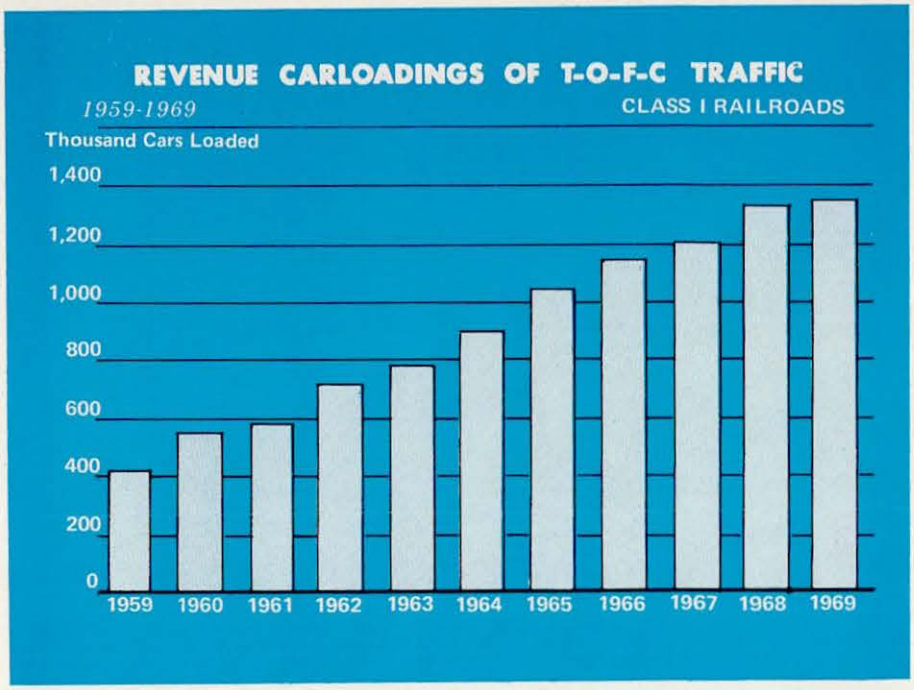
For the second successive year, the railroads in 1969 handled more than 5 million new automobiles and trucks. Statistics of the Automobile Manufacturers Association are expected to show that the rail share of total shipments exceeded 50% for the first time since World War II. Ten years ago, prior to the introduction of multilevel rack cars, the rail share had dwindled to 8%.

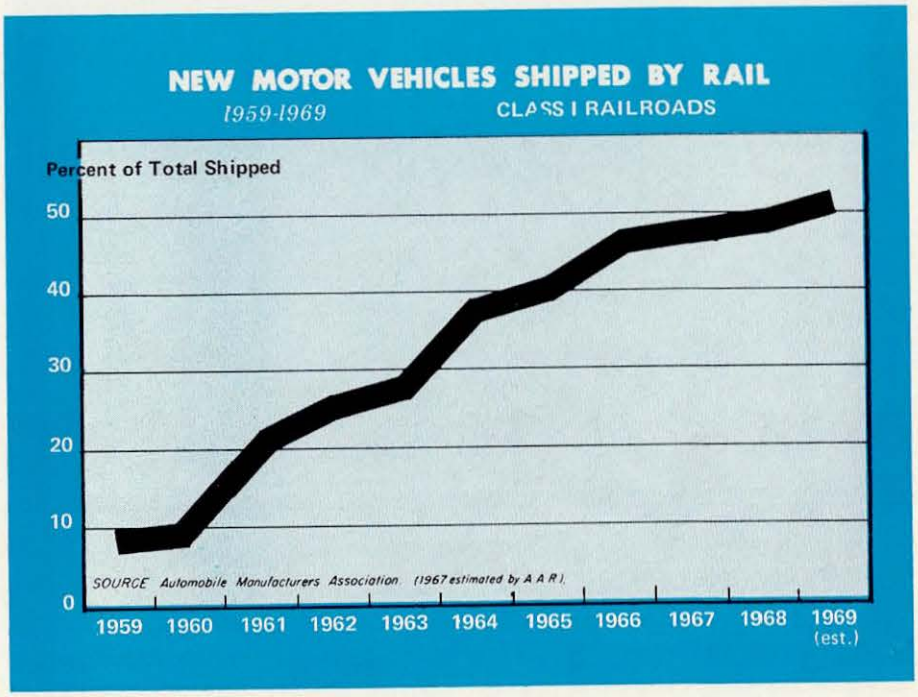
Revenue passenger-miles as shown in Table 7, continued on a sharp downward trend in 1969 reflecting a further shift of the traveling public to other modes. Although travel on commuta-

tion and multiple-ride tickets was up about 4% over 1968, total passenger-miles declined to about 12.1 billion, 8% lower than in the previous year. Final 1969 figures are expected to show that intercity coach travel dropped by about 13 percent to 6.6 billion and that first-class passenger-miles also were down by approximately 13% to 1 billion.

Railroads' efforts to discontinue operation of deficit-burdened intercity trains have aroused increasing Congressional concern. At year-end, various plans for preserving railroad passenger service were under consideration, including a railroad-sponsored proposal that would provide indemnification for losses and government financing of new passenger cars for trains the carriers might be required to operate to meet an established public need.

The high-speed Metroliner service between Washington and New York, inaugurated in early 1969, had been stepped up by year-end to six trains in each direction, carrying altogether some 4,000 passengers a day. Expansion of service to nine high-speed trains per day, scheduled to begin in mid-December, was delayed temporarily due to equipment problems.





Rates and fares

Again in 1969, as in the two previous years, railroads were before the Interstate Commerce Commission and numerous State regulatory bodies seeking authority to increase their rates to offset continued rising costs.

● **Revenue needs.** The ICC's final report and order in Ex Parte 259, *Increased Freight Rates, 1968* (332 I.C.C. 714), was decided Jan. 9, 1969, permitting, with certain modifications, the continuation of increases which had become effective on Nov. 28, 1968. Several groups of shippers instituted action in the U.S. District Court for the District of Columbia to enjoin, annul and set aside these rate increases. In an opinion in December the Court concluded "that it lacks jurisdiction to review the questioned Commission orders and that it is unnecessary, therefore, to reach the issues raised by the plaintiff shippers."

The railroads on Oct. 10, 1969, filed a petition with the Commission seeking authority to publish a tariff, effective on 24 hours' notice, increasing all freight rates and charges by 6%, on an emergency basis, subject to refund. The railroads cited increased costs and revenue needs actually incurred, or to be incurred, prior to Dec. 31, 1969. The Commission denied short notice publication but granted permission to file the tariff on normal 30-day statutory notice with an effective date not earlier than Nov. 18, 1969. The Commission identified the case as Ex Parte 262, *Increased Freight Rates, 1969.*

Provision was made for the filing of protests to the proposed increases on or before November 6, for replies by November 10, and for oral argument before the Commission on November 12. The Commission issued its order on November 17 allowing the increases to become effective November 18 as published and ordered an investigation into the increased rates, generally limited to issues of discrimination, preference and prejudice. By order dated November 25, the Commission set forth the procedure to be followed in connection with the investigation, including orderly filing of verified statements by the opposition and reply verified statements by the railroads, with hearings in contemplation thereafter.

Before initiating the broad revenue program in Ex Parte 262, the railroads undertook to deal with some rate problems in specific terms so that certain

BRIGHT SPOTS: RENT-A-TRAIN, MINI-TRAINS, UNIT TRAINS

services now provided at a loss would not have to be supported in part by contributions from the general shipping public.

Tariff schedules also were filed proposing increases in charges for the service of stopping cars in transit for partial loading or unloading, for track storage in transit of loaded cars, and for facilities and services associated with the movement of waterborne freight through Atlantic and Pacific ports. A minimum per-car transit charge and restrictions on the use of the overflow or follow-lot provisions of Rule 34 were also proposed. Railroad out-of-pocket costs calculated on the ICC staff's formula were developed and relied on in large measure to support the reasonableness of the proposed tariff changes.

The Commission suspended virtually all of these proposals and made them subjects of investigation. Meanwhile the railroads must continue to provide these services at less than cost.

● **Section 4.** A judgment filed June 27, 1969, by the U.S. District Court for the Northern District of Illinois, Eastern District, upheld the ICC's 1968 decision in Docket 34238, ending joint rail-truck rates on iron and steel pipe which the Commission found discriminated against barge traffic.

● **Rent-a-Train.** The Commission's Division 2, in report and order in Docket 34905, *Grain by Rent-a-Train,* decided May 28, 1969, found that certain provisions of Illinois Central's tariff providing "Rent-a-Train" grain rates are not just and reasonable but stated that the Illinois Central could publish a new tariff eliminating the objectionable features. On July 1, upon petition of certain protestants, the Commission declared the proceeding to involve an issue of general transportation importance and modified its May 28 order so as to postpone the compliance date. Thus the "Rent-a-Train" tariff remains in effect pending further order by the entire Commission.

● **Mini-trains.** So-called mini-train rates were established to Indianapolis, Ind., on grain. These rates call for 10-car shipments subject to a minimum of five 24-hour round trips per week and involve hauls up to 80 miles. They provide an economical method to gather short-haul grain tonnage for delivery to terminal elevators and processing plants.

● **Unit trains and incentive rates.** A new "Coal Liner" unit train, officially dedicated in mid-year, is moving 8,400 tons of coal every four days from a new $1 million coal-loading facility at Sunnyside, Utah to Fontana, California. The "Coal Liner" is made up of 84 new 100-ton high-side gondola cars.

Other high volume movements receiving rate attention during the year included 100-car trainload rates on grain from Illinois, Indiana and Ohio to North Atlantic ports, and trainload rates on ore from Minnesota to Burns Harbor, Indiana. Numerous other rate adjustments were made based on multiple-car shipments or annual volumes of such commodities as anhydrous ammonia, caustic soda, potash and sulfur.

Railroad traffic officers continued to provide incentives for more effective use of costly freight cars by coupling reduced rates with heavier loading. For example, on paper and paper articles from the Southwest to Official Territory, a lower rate is now provided on the excess over 100,000 pounds loaded in the same car; and a 120,000-pound minimum is associated with new reduced rates on canned foods.

● **Passenger fares.** Most of the passenger-carrying railroads in the United States increased their basic one-way and round-trip passenger fares during the year. These were not territorial increases with a common effective date, but were increases by individual lines with different effective dates and varying generally between 5 and 10%. A number of railroads, both in Eastern and Western territories, increased their commutation fares and these increases, for the most part, were either 5 or 10%.

● **Express traffic.** With the bulk of its rail shipments being handled piggyback in freight service rather than on passenger trains, the 1959 contracts with REA Express, which provided for payment to the railroads on a car-foot-per-mile basis, were terminated as of Jan. 1, 1969. New contracts were negotiated for TOFC service. The new contracts are based upon commercial rates with special provisions as to articles handled by REA Express which are not normally accepted by other common carriers.

● **Railway mail pay.** By order of the Commission dated March 17 in Docket 9200, Railway Mail Pay, postponement of the biennial bin test was granted. These tests serve as the basis of determining linear feet of mail-carrying capacity in connection with the carriage of storage mail, and the results have a definite bearing on revenues received by railroads for mail carried in lesser units of space. The last tests were conducted by the Postmaster General with the assistance of railroads in April 1967.

Also during the year some railroads and a few terminal companies (union depot companies) were successful in negotiating increases in the terminal charge paid by the Post Office Department for handling, loading and unloading services.

Employment and compensation

Railroad employment averaged approximately 578,000 during 1969, down about 12,000 or 2.1% below the 1968 level, continuing at a somewhat reduced rate the declining trend shown in Table 9. Total payroll, however, rose to an estimated $5,300 million, nearly $190 million more than in 1968. Total payroll and supplements, including approximately $530 million in payroll taxes and $220 million in health and welfare benefits, amounted to about $6,050 million, an increase of more than $200 million over 1968, and an all-time high.

The record in labor costs despite reduced employment resulted from substantially increased rates of pay. Annual earnings per employee as reflected in 1969 wage statistics are expected to show an average of about $9,170, up 6% over 1968, while wage supplements averaged about $1,300 per employee, up 5% from the previous year. The average straight-time rate of pay was an estimated $3.69 and straight-time hourly earnings (straight-time pay per straight-time hour worked) averaged about $3.98, both up more than 6%. Total labor cost per hour actually worked, including both straight-time and overtime pay, vacation and holiday pay, the effect of mileage on pay in train and engine, various arbitraries, and the wage supplements came to about $5.20 per hour actually worked, or 41% more than the straight-time hourly rate.

Since wage statistics include only wages and salaries actually paid for service performed in the reporting period, they do not reflect retroactive wage increases paid in 1969 applicable to 1968, or anticipated wage increases accrued in 1969 expenses but not actually paid in the current year.

● **Wage increases in 1969.** Wage agreements in 1967 and 1968 with unions representing the great majority of railroad employees included provisions for wage increases in both 1968 and 1969 and thus set a pattern for

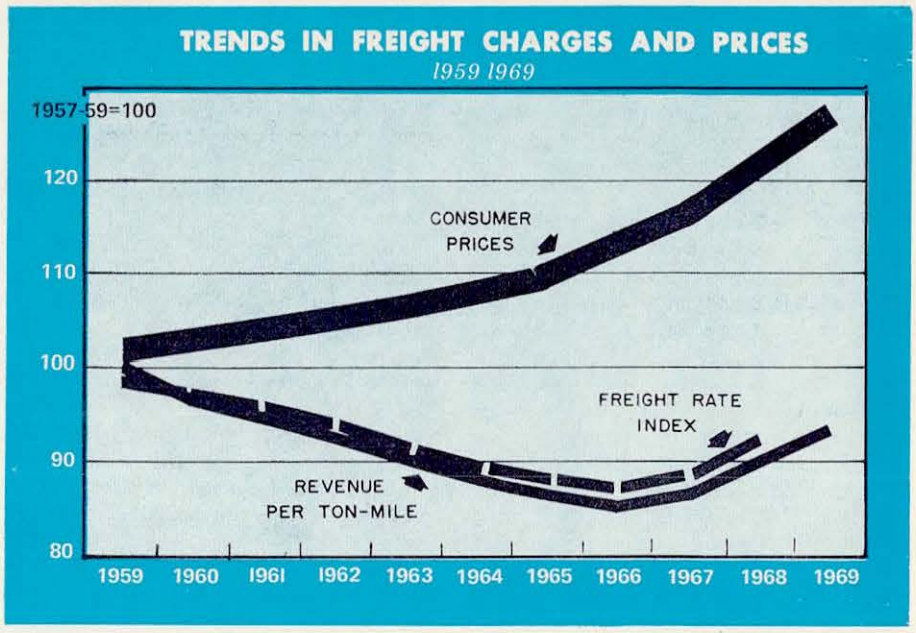
settlement of wage demands of other rail unions.

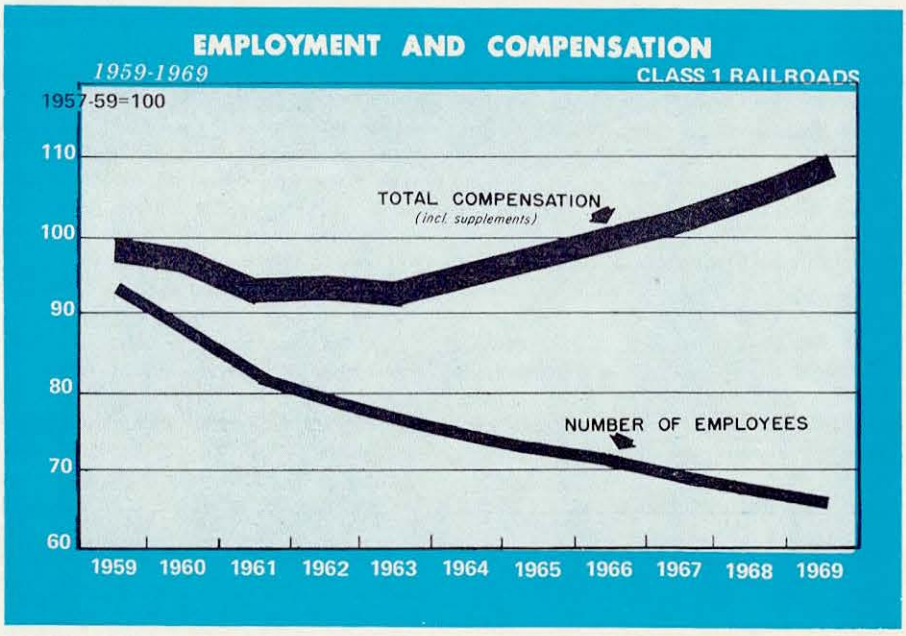
Demands of the Brotherhood of Locomotive Engineers and of road conductors represented by the United Transportation Union, carried over from 1968, were heard by Presidential Emergency Boards and settled by agreements of March 10 and 19, 1969. The agreements provided increases of 5% in basic daily rates and 3.5% in mileage rates effective July 1, 1968, plus the pattern 1969 increases of 2% on January 1 and 3% July 1. Road service engineers also received a special adjustment of 2% July 1, 1969, and a uniform differential of $4.00 per basic day was established for engineers working without firemen. Road conductors were granted an additional 1% plus 32 cents per basic day effective July 1, 1969, and an increase in car scale additives retroactive to Jan. 1, 1968. Following the pattern of 1968 settlements, conductors working local freight and other runs of 100 miles or less received an additional 40 cents per basic day effective July 1, 1968.

Also signing on a pattern basis were the Signalmen whose 1968 demands had likewise been before an Emergency Board. Their settlement, signed April 21, 1969, called for a 3.5% wage increase effective July 1, 1968, plus 22 cents per hour for mechanics and 9 cents per hour for others, and the 1969 pattern increases of 2% January 1 and 3% July 1.

Wage demands of the shopcraft unions were heard by an Emergency Board, which recommended they be granted the pattern increases in 1969, plus adjustments for the most highly skilled employees, and further increases based on savings effected by rule changes to be negotiated. However, these disputes were not finally settled during the year.

On Dec. 4, 1969, after marathon negotiations under threat of strike, the carriers signed a memorandum of understanding with the Machinists, Boilermakers, Sheet Metal Workers and Electrical Workers, calling for pattern increases of 2% and 3% in January and July 1969, plus additives of 10 cents an hour effective Sept. 1, 1969, and for mechanics additional increases of 5 cents an hour July 1, 1969, and 7 cents upon ratification of the agreement. Also to be included were increases in 1970 of 5% on January 1, 4 cents an hour on April 1, and another 4 cents on August 1. However, reportedly because the agreement gave the railroads some relief from strict adherence to craft lines at running repair locations, the Sheet Metal Workers declined to ratify the agreement.





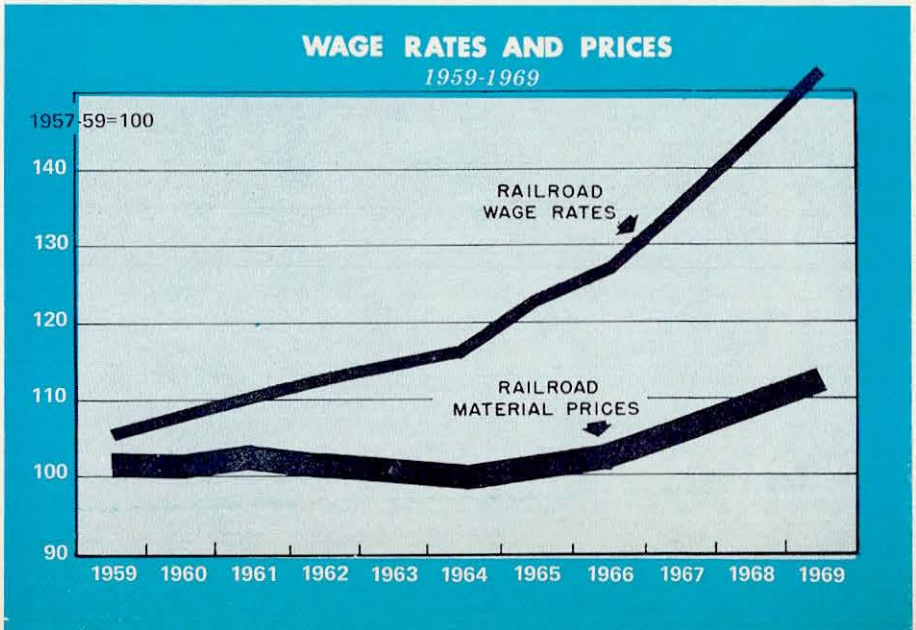


Table 9: Employees and Their Compensation—1959-1969

Year	Average number of employees	Total payroll (thousands)	Average annual earnings per employee	Average straight-time Hourly rate	Average straight-time Hourly earnings
1959	815,474	$4,986,253	$6,115	$2.56	$2.72
1960	780,494	4,893,558	6,270	2.62	2.80
1961	717,543	4,623,982	6,444	2.69	2.87
1962	700,146	4,662,065	6,659	2.75	2.95
1963	680,039	4,629,566	6,808	2.87	2.99
1964	665,034	4,697,884	7,064	2.85	3.06
1965	639,961	4,793,066	7,490	3.00	3.22
1966	630,895	4,879,273	7,734	3.10	3.33
1967	610,191	4,933,663	8,085	3.30	3.56
1968	590,536	5,110,636	8,654	3.47	3.74
1969 (est.)	578,000	5,300,000	9,170	3.69	3.98

Table 10: Index of Wage Rates and Material Prices—1959-1969

(Averages 1957-1959 = 100)

Year	Wage Index	Price Index: Fuel	Price Index: Other material	Price Index: Total material	Index of wage rates and prices
1959	105.1	98.8	102.0	101.2	104.1
1960	107.8	94.4	103.6	101.2	106.1
1961	110.4	96.3	103.7	101.7	108.2
1962	112.9	95.5	103.1	101.0	110.2
1963	114.1	95.0	102.8	100.7	111.1
1964	117.0	89.5	103.7	100.0	113.1
1965	123.2	91.7	104.5	101.1	118.2
1966	127.3	93.2	106.3	102.8	121.7
1967	135.6	95.9	110.1	106.4	129.0
1968	142.7	99.3	113.0	109.3	135.0
1969 (Prel.)	151.5	102.3	116.2	112.6	142.7

Table 11: Prices, Freight Rates and Revenue Averages—1959-1969

Year	Consumer price index (1957-59 = 100)	ICC freight rate index (1950 = 100)	Revenue per ton-mile (cents)	Revenue per passenger-mile (cents)
1959	101.5	118	1.445	2.951
1960	103.1	116	1.403	3.011
1961	104.2	114	1.374	3.079
1962	105.4	112	1.348	3.110
1963	106.7	109	1.310	3.179
1964	108.1	107	1.284	3.168
1965	109.9	105	1.266	3.182
1966	113.1	104	1.257	3.182
1967	116.3	105	1.269	3.195
1968	121.2	109p	1.310	3.389
1969	127.7e	112e	1.350e	3.614e

p Preliminary. e Estimated.

Negotiations were scheduled to resume in January 1970, and the unions agreed not to strike prior to January 19.

● **Pending notices.** In addition to the unsettled Shopcraft Organizations' proposals, notices were pending at yearend, affecting virtually every represented railroad worker, proposing increases in rates of pay and other changes effective after the generally-prevailing Dec. 31, 1969, moratorium date.

● **Firemen manning issue.** Proposals were still pending at year-end concerning the restoration of abolished positions of firemen on electric and diesel locomotive in freight and yard service. Talks between the railroads and the United Transportation Union are to begin on Jan. 26, 1970, with Frederick R. Livingston acting as special mediator.

Wage rates and prices

The economic problem spun by inflationary forces is epitomized in the AAR's index of wage rates and material prices shown in Table 10. As there so clearly depicted, wage and price increases were relatively moderate for the first seven years of the decade 1959-1969, but trend lines turned up sharply after 1966. Wage rates increased at an average annual rate of less than 3% from 1959 to 1966 but in the next three years the annual increase averaged 6%. Material prices advanced less than 2% for the entire seven-year period to 1966, but rose by more than 3% *a year* thereafter.

For 1969 as a whole the wage index was an estimated 151.5% of the 1957-1959 average, up 6.2% from 1968, not including the effect of wage increases for shopcraft employees pending at year-end, and including only six-months' effect of wage increases paid from July 1, 1969. The index of material prices on a "charge-out" basis —reflecting original cost of materials consumed during the year—averaged 112.6% of 1957-1959 prices, up 3% from 1968. The quarterly spot-price index as of October 1 was up to 114.3, and rising.

Railroads were able to absorb the more moderate wage and price rises without increasing freight rates after 1960; in fact, the trend of rates was downward. After 1966, however, the rate of inflation exceeded the yield of cost-cutting measures, and the carriers were required to make moderate increases in their rates and fares in an effort to mitigate severe declines in net earnings.

So far as freight rates are concerned, however, the price of railroad services in 1969 was still below the level ten years earlier. As shown by Table 11, the ICC's freight rate index for 1969 was an estimated 112, or 5% below 1959's index of 118, while the Government's Consumer Price Index, estimated at 127.7, was 26% above the 1959 level.

Even with all the 6% Ex Parte 262 freight rate increases in effect for an entire year, the rate index would be no higher than it was in 1959 and would be below the 1958 average.

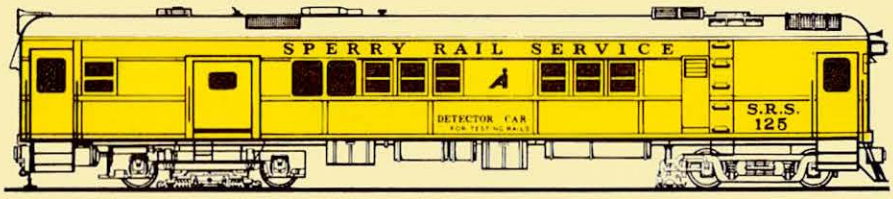
Equipment trends

Modernization of equipment fleets continued in 1969 with the addition of about 76,000 new and rebuilt cars—10% more than the number installed in the previous year — and approximately 1,100 new locomotives, a slight increase over the 1968 figure. Reflecting a continuing shift to larger freight cars and more powerful diesel locomotive units, the national fleet capacity and the aggregate pulling power of the locomotive fleet both increased, despite slight declines in ownership figures.

As shown in Table 12, the total number of freight cars in service at year-end approximated 1,796,000, only 0.5% fewer than the Dec. 31, 1968, figure. This freight car total includes equipment of Class II railroads, switching and terminal companies, and the private car companies, as well as the Class I line-haul carriers. The so-called "private" fleet, which includes railroad-controlled companies such as Trailer

this track record can't be beat

5 million miles tested
2½ million defects found
by experienced personnel and equipment that will continue to provide the most effective method of rail defect detection for the further advancement of rail transportation safety



SPERRY RAIL SERVICE

AUTOMATION INDUSTRIES, INC.
MATERIALS EVALUATION GROUP
SHELTER ROCK ROAD, DANBURY, CONNECTICUT 06810

Train, Pacific Fruit Express, Fruit Growers Express, and others, as well as car companies not affiliated with railroads, increased by some 9,000 cars in 1969 and now accounts for about 18% of the total.

The trend of shipper preference toward large and specialized freight cars accelerated in 1969, as illustrated by an ownership increase of about 6,000 in high-capacity covered hoppers. The number of equipped box, flat and tank cars also rose, while the ownership of plain box, gondola, open-top hopper, stock and refrigerator cars continued to decline.

The average capacity of new and rebuilt cars installed in 1969 was about 80 tons, while the average for cars retired approximated 57 tons. At year-end, the average freight car capacity was about 65.5 tons, 1.2 tons higher than the December 31, 1968 figure and 10.5 tons above the average of ten years ago. The aggregate fleet capacity is now an estimated 117.5 million tons, 8% greater than the comparable figure of a decade ago, even though the number of cars in service has declined by nearly one-tenth.

During the last decade, 705,000 new and rebuilt freight cars have been added to the fleet. Over the same period, more than 9,000 new and rebuilt diesel-electric locomotives have been installed, with units of 3,600 or more horsepower predominating in the last three years.

With the continuing diversion of passenger, mail and express traffic to other modes, rail ownership of passenger-train equipment continued a sharp downward trend. As shown in Table 12, the number has dropped by nearly 7,000 cars—more than one-third—in two years. Only about 50 new cars were added in 1969.

Looking toward 1970, the American Railway Car Institute's market analysts have forecast a slight decline in new freight car deliveries. A moderate drop in locomotive installations has also been predicted. Neither of these forecasts, however, took account of the equipment amortization provisions included in the Tax Reform Act passed late in December 1969, which will provide an incentive for purchase of rolling stock by taxpaying railroads having access to the requisite funds.

Table 12: Inventory of Equipment—1959-1969

December 31	Freight cars [a]	Passenger cars (incl. Pullman)	Head-end passenger-train cars	Diesel locomotive units	Other locomotive units
1959	1,982,110	17,459	13,208	28,238	1,288
1960	1,968,771	16,181	12,818	28,369	774
1961	1,907,723	15,004	12,345	28,240	614
1962	1,852,992	14,240	11,788	28,170	505
1963	1,817,026	13,732	11,369	27,969	478
1964	1,802,582	12,507	11,154	27,879	433
1965	1,803,227	11,371	10,502	27,433	399
1966	1,834,963	10,665	9,932	27,516	378
1967	1,827,376	9,845	9,147	27,317	353
1968	1,804,712	8,736	6,746	27,045	331
1969 (est.)	1,796,000	6,700	5,300	26,850	330

[a] All cars, railroad and private.

Table 13: New Equipment Installed—1959-1969

Year	Freight cars	Passenger-train cars	Diesel-electric units	Other locomotives
1959	46,023	74	835	7
1960	58,322	239	440	13
1961	34,241	204	242	32
1962	39,822	285	754	28
1963	48,255	143	806	13
1964	83,266	408	1,116	—
1965	89,653	577	1,440	—
1966	106,058	103	1,394	—
1967	100,181	138	1,067	—
1968	68,836	89	1,055	—
1969 (est.)	76,000	50	1,100	—

Note: Units of equipment rebuilt are counted as new. Freight car installations include cars of all railroads and private car lines.

Legislative activity

Many measures of major importance to railroads were considered by the first session of the 91st Congress, but legislative action was completed on few. Little progress was made on the industry's affirmative legislative program involving transport diversification, rate-making freedom, user charges on public ways, and other matters affecting the carriers. Such legislation, as well as numerous proposals adverse to railroad interests, remain for consideration in the second session.

● **Tax reform bill.** Railroad efforts to modernize and improve equipment supply lost an effective aid when the Congress, as part of the Tax reform Bill of 1969 (enacted as PL 91-172) adopted a Presidential proposal to cancel the 7% investment tax credit as of April 18, 1969. Property on order or under construction prior to April 19 will be eligible for the credit when placed in service, and unused credits carried over from prior years will be usable, subject to limitations.

As a substitute for the incentive and financial assistance provided by the investment credit, provisions were incorporated in the law for 5-year amortization of rolling stock owned or leased by railroads and their subsidiaries. A provision to allow amortization of investment in grading and tunnels over a 50-year period was enacted by the Senate but was revised in conference to apply only to investments made after 1968.

● **Passenger train service.** Many proposals are before the Congress regarding the operation or discontinuance of railroad passenger trains. S. 2750 and H. R. 14661 embody a railroad industry proposal that the public treasury shall bear the burden of losses sustained from trains which the Interstate Commerce Commission requires to be operated. Government funds could also be used to acquire and lease passenger train equipment to the carriers involved. Another proposal, made by ICC, would give it authority over standards of passenger service on specific trains.

● **Railroad safety.** A bill passed by the Senate in December (S. 1933) would give the Secretary of Transportation broad authority to issue rules, regulations and minimum standards in areas of railroad operations involving safety. The bill differs considerably from legislation recommended to Secretary Volpe in June 1969 by a special Railroad Safety Task Force composed of representatives of labor, management and state regulatory bodies. It also differs considerably from the bill sponsored by the Administration.

● **Hours of service.** PL 91-169, signed by the President December 26 reduces the maximum continuous hours

MERGER ACTION COOLED OFF; PASSENGER-TRAIN COSTS AND

on duty from 16 to 12 (in two steps over three years) for employees engaged in or connected with the operation of trains and also prohibits such employees from continuing on duty or going on duty without having had eight hours' rest in the preceding 24 hours. The measure contained other amendments as well.

● **Railroad retirement.** Legislation agreed to by the railroads and unions representing a majority of railroad workers would extend supplemental retirement annuities for long-service employees and provide for additional financing to meet a deficiency in the present temporary plan. Another provision would fix a mandatory retirement age, starting at 70 on June 1, 1970, and dropping to 65 on Jan. 1, 1976. The bill (H. R. 13300) passed the House in September, but had not passed the Senate at year-end.

● **ICC reorganization.** The President's Reorganization Plan No. 1 for the Interstate Commerce Commission became effective automatically on October 11 when neither house of Congress passed a resolution of opposition.

Among other things, the new plan changes the annual rotation of the Chairman of the ICC to a procedure whereby, beginning in 1970, a Chairman will be selected on a permanent basis by the President.

● **User charges.** In his final Budget Message of Jan. 15, 1969, President Johnson again recommended . . . "legislation for user charges in the field of transportation, so that those who benefit directly will pay a fairer share of the costs involved." He recommended a charge of 2 cents per gallon (increasing to 10 cents per gallon over the next five years) on the now untaxed fuel used by vessels on inland waterways; increasing the present 4-cents-per-gallon diesel fuel tax for highway users to 6 cents per gallon; and changing the present fixed-use tax on heavy vehicles to a graduated tax scale based on weight. The proposals, along with additional charges for airway users, were sent to Congress by the Department of Transportation. The draft proposals of DOT for highway user charges were introduced to Congress in H. R. 15106.

The Nixon Administration has since proposed a new version of user charges on air passengers and freight, including an 8% tax on air cargo; a 5% tax on air freight waybills; an 8% tax on passenger tickets; a $3-per-ticket tax on most international flights originating in the United States and on flights between the 48 contiguous states and Hawaii, Alaska or other outlying possessions of the United States. The Administration proposes to abolish the 4-cents-per-gallon gasoline tax applicable to air carriers, on either gasoline or jet fuel and to increase the general aviation fuel tax from its present 4 cents per gallon to 9 cents per gallon.

The Congress has not yet acted.

● **Waterway appropriations.** Public Law 91-144, Dec. 11, 1969, appropriated $1,141,683,000 for the Civil Works Program of the Corps of Engineers for fiscal year 1970, including $711,992,000 for construction, $253,000,000 for maintenance and operation, and $41,191,000 for general investigations. The amount appropriated for construction is $151,000,000 less and the total about $100,000,000 less than the 1969 appropriation.

Congress did not pass a Rivers and Harbors Bill (authorization bill) in 1969. However, the Secretary of the Army recommended the replacement of Locks and Dam No. 26, Mississippi River, Alton, Illinois, under Section 6 of the Rivers and Harbors Act of 1909, at a cost of $203,000,000.

● **Other matters.** Bills of interest on which hearings were held but no legislative action taken included bills to outlaw discriminatory tax assessments of carrier property, to authorize a $3.1-billion Federal aid program for urban mass transportation, to increase vehicle size and weight limits on the Interstate Highway System, and to permit barge operators to mingle regulated commodities and unregulated dry bulk commodities in a single tow. These and many other transportation measures remain for attention in the second session.

Administrative proceedings

In addition to the major 1969 developments reviewed elsewhere herein under the heading of *Rates and Fares*, noteworthy proceedings before Federal agencies and the courts included the following.

● **Unifications.** It was a relatively quiet year for mergers, with only one Commission decision, one examiner's report, and, for the first time in ten years, no new applications for mergers of Class I railroads.

Three unifications were consummated. Purchase by the Louisville & Nashville of the Evansville line of the Chicago & Eastern Illinois was concluded on June 6, the Piedmont & Northern became part of the Seaboard Coast Line on July 1, and the Southern reduced the number of its family lines by merging the New Orleans & Northeastern into the Alabama Great Southern on January 31.

Merger of the Chesapeake & Ohio into the Norfolk & Western was recommended by an examiner's proposed report on March 20. This four-year old application also embraced the Delaware & Hudson and Erie Lackawanna—now part of the N & W family—the Central of New Jersey—now in bankruptcy—the Boston & Maine and the Reading.

Hearings were completed on 1968 applications of the Louisville & Nashville to acquire the Monon and of the Illinois Central and GM & O to form a consolidated Illinois Central Gulf Railroad Company. Also pending before the Commission are the C &NW-Milwaukee merger, recommended by the examiner in a December 1968 report, and competing proposals of the North Western and Union Pacific to acquire the Rock Island, in which a recommended report is awaited.

The oldest of the pending cases, the merger of the Great Northern, Northern Pacific and Burlington, was argued before the Supreme Court in 1969. This proposal went to the ICC in 1961, was approved in 1967 and reached the Supreme Court about a year ago.

● **Passenger service.** A major contribution to public knowledge about the railroad passenger service problem was made by the ICC in a 1969 study of costs of operating intercity passenger trains. Made in response to requests from chairmen of both the House and Senate Commerce Committees, the study showed that eight railroads accounting for 40% of the industry's intercity passenger-miles had a net pre-tax loss in 1968 of $118 million, which could have been avoided by complete discontinuance of their intercity services. In transmitting the report to the Congress, ICC Chairman Brown offered Commission support for a program of Federal aid to subsidize needed trains that cannot be operated without significant losses.

In Docket 34733 involving the extent of ICC authority over service standards

PER-DIEM CHARGES WERE IN THE SPOTLIGHT

on interstate passenger trains, the Commission ruled that it lacked such authority, thereby reversing an examiner's recommended report. The Commission later asked the Congress to grant it such additional powers.

● **Car service.** On September 3, Division 3 of the Interstate Commerce Commission, served a report and order in Ex Parte 241, *Investigation of Adequacy of Railroad Freight Car Ownership, Car Utilization, Distribution, Rules and Practices,* which reversed an examiner's 1968 recommendation that the proceeding be discontinued.

The Division found that railroad respondents as a group lacked an adequate freight car supply and failed to furnish adequate freight car service, prescribed seven AAR car service rules for mandatory observance, and endorsed the AAR car ownership formula with accompanying reporting requirements.

Railroads filed petitions for reconsideration, and the Commission on November 4 "postponed until further order" a final decision.

In I & S Docket 8419 the hearing examiner found that a proposed change in the average demurrage agreement which would require two credits to offset one debit, was not shown to be just and reasonable. Exceptions and replies were filed by the parties.

● **Freight car hire.** On November 10, the U. S. Supreme Court by a brief order without opinion affirmed lower court decisions which upheld the Commission's 1968 decision in Dockets 31358, 33145 and 34405, prescribing a combined time-mileage system of car hire for future application on railroad-owned cars and fixing rates for settlement of certain inter-railroad disputes applicable to past periods. On December 5, the railroad appellants filed a petition to reconsider.

In Ex Parte 252, Sub-No. 1, the Commission served a report on Dec. 22, 1969, proposing a system of incentive per diem charges to apply to general service box cars during the fall and winter months. The incentive payment, representing an additional 6% annual return on depreciated original cost (12% during the six months in which it would apply) would be usable by the receiving road only to purchase general service box cars in excess of its average purchases in a specified prior period. Interested parties were invited to file statements pro and con.

Examiners' reports were issued in I & S 8406 and 8407 involving mileage allowances and rules relating to the use of privately-owned freight cars. Issues relate to the Commission's power to prescribe specific, as well as maximum, allowances payable by railroads to non-carriers, and reasonableness of proposed equalization rules and mileage allowances. Oral argument was heard by Division 2 on the tank car case, I & S 8406.

The Commission on February 5, 1969, reopened for further hearing the rule-making proceeding under ICC Docket 34013 (Sub-No. 1), *Cost Standards in Intermodal Rate Proceedings.* Statements pertaining to the determination of inherent cost advantage were due to be filed Jan. 16, 1970.

● **North-South divisions.** In response to the Supreme Court's 1968 order in the North-South divisions case, requiring the ICC to make more specific findings as to cost underlying its 1965 decision in Docket 29885, the Northern lines in March 1969 petitioned the Commission for a report with findings in support of its earlier decision. The Southern lines filed a reply on May 20.

● **Interlocking provisions.** In response to a petition filed by the railroads, the Commission by notice of December 5 in Ex Parte 260, instituted a rule-making proceeding with a view to easing requirements governing interlocking officers and directors of two or more carriers when the carriers are lawfully under common control.

● **Waterway policy and projects.** The Water Resources Council in June 1969 published recommended changes in procedures for evaluating water resource projects and conducted a series of nine public hearings throughout the country to obtain the views of the public. Currently the Council is testing its proposed procedure on several projects following which another series of public hearings will be conducted.

Under the formula adopted by the Water Resources Council in December 1968 for computing the interest rate to be used in evaluating water resource projects, the rate was increased to 4⅞% for fiscal year 1969. This raised the previously effective interest rate by ¼%, the maximum increase permitted by the formula.

The National Water Commission, established by Public Law 90-515, conducted a series of public hearings during 1969, including a two-day hearing in Washington, D. C., on November 6-7.

The National Water Commission is composed of seven members appointed by the President. It is responsible for reviewing the Nation's present and anticipated water requirements, including an evaluation of economic and social consequences of water resource projects. The Commission is to submit its findings to Congress and the President by September 1973.

Waterway improvements

The following summarizes 1969 actions and status of important inland navigation projects:

(1) The Office, Chief of Engineers, recommended authorization and construction of the Trinity River Navigation Project. Congress included $150,000 for preconstruction planning of the project in the 1970 Public Works Act.

(2) The Office, Chief of Engineers, forwarded the report on the Upper Columbia River Navigation Project to the Secretary of the Army and the Bureau of the Budget.

(3) Although it was not included in President Nixon's revised budget request, Congress appropriated $350,000 for pre-construction planning for the replacement of Locks and Dam No. 26 on the Mississippi River at Alton, Illinois.

(4) A report from the Huntington District, Corps of Engineers, recommending replacement of Gallipolis Locks and Dam, Ohio River, is currently being reviewed by the Board of Engineers for Rivers and Harbors.

(5) The Secretary of the Army and the Bureau of the Budget approved a change in Smithland Locks and Dam, Ohio River, providing parallel locks 110 feet wide and 1,200 feet long in lieu of previously authorized dual locks 110 feet x 600 feet and 110 feet x 1,200 feet. This is the first Ohio River replacement project with dual locks, each 1,200 feet in length.

(6) Navigation on the Arkansas River was extended to Fort Smith in December 1969. It is estimated that navigation will reach Tulsa, Oklahoma, by late 1970 or early 1971.

(7) The Upper Missouri River Project, Sioux City to Yankton, is still under study by the Corps of Engineers. ■

1969 REVIEW

Car and locomotive orders;

1969 FREIGHT-TRAIN CAR ORDERS

Purchaser	No.	Type	Capacity	Length Ft.	Length In.	Weight	Ordered	Delivery Date	Builder
Aluminum Company of America	18	Coil Steel	200,000	48	..	.....	May	Jan. '70	U.S. Railway Equip.
	10	Cov. Hopper	200,000	50	7¾	53,500	Feb.	June	Magor Railcar
Atchison, Topeka & Santa Fe	32	Box	200,000	86	6	.....	Feb.	Nov.	Thrall Car
	50	Box	140,000	86	6	.....	Sept.	Oct.	Pullman-Standard
	38	Box	200,000	86	6	.....	Dec.	Mar. '70	Greenville Steel Car
	50	Ins. Box	200,000	60	..	.....	Nov.	June '70	Pullman-Standard
	300	Box	140,000	50	6	.....	Dec.	May '70	Company Shops
	200	Box	140,000	50	6	.....	Dec.	July-Aug. '70	Constructora Nacional De Carros
	65	Flat	140,000	89	4	.....	Dec.	Dec.'69-Mar.'70	Company Shops
	50	Box	200,000	86	6	111,800	Apr.	Oct.	Pullman-Standard
Atlas Chemical Co.	4	Cov. Hopper	.....	48	11	69,600	July	Nov.	General American
Avco Corp.	2	Well	140,000	108	..	116,800	Mar.	Oct.	Southern Iron & Equip.
Bangor & Aroostook	100	Box	140,000	50	6	60,500	Aug.	Jan. '70	Pullman-Standard
	50	Mech Refrig.	140,000	50	6	88,000	Mar.	June '70	Pacific Car & Foundry
Bessemer & Lake Erie Railroad Co.	55	Cov. Hopper	200,000	54	6⅝	62,000	July	Oct.	Pullman-Standard
	200	Self-Clearing Hopper	200,000	46	3⅛	68,000	Nov.	Mar.-Apr. '70	Pullman-Standard
	5	Coil Steel Cov. Gondola	200,000	52	6	70,000	Dec.	Apr. '70	Darby Corp.
	1	Hopper	200,000	43	1	72,300	Jan.	Mar.	Pullman-Standard
Butler Manufacturing Co.	50	Cov. Hopper	.....	..	..	.....	Mar.-Apr.	4th Qtr.	North American Car
	50	Cov. Hopper	.....	..	..	.....	Oct.	1970	North American Car
Chattahoochee Valley	52	Box	140,000	50	6	63,000	April	Dec.	Pullman-Standard
Chesapeake & Ohio/Baltimore & Ohio	3500	Hopper	200,000	45	..	59,000	Dec.	Aug.'70-Jan.'71	Company Shops
	900	Gondola	200,000	52	6	69,000	Dec.	Dec. '70	Company Shops
	600	Gondola	200,000	52	6	69,000	Mar.	Dec.	Company Shops
	25	Box	140,000	60	..	.....	Aug.		ACF
	13	Box	200,000	60	..	.....	Aug.		ACF
	20	Air Dump	140,000	31	9	65,000	Mar.	Oct.	Difco
	60	Caboose	.....	30	..	55,000	Mar.	Apr.	International Car
	650	DF Box	140,000	50	..	.....	Mar.	Dec.	Berwick Forge
	550	DF Box	140,000	50	..	.....	Mar.	Dec.	Pullman-Standard
	100	DFB Box	140,000	50	..	.....	Mar.	Oct.	Pullman-Standard
	100	Box	200,000	86	..	.....	Apr.	Nov.	Pullman-Standard
	41	Box	140,000	86	..	.....	Mar.	Dec.	Greenville Steel Car
	22	Auto Rack	140,000	89	..	.....	Jan.-Mar.	Feb. Mar.	Whitehead & Kales
	64	Auto Rack	140,000	89	..	.....	Apr.-May	Apr.-May	Paragon
	2	Depressed Flat	250,000	78	6	166,500	Apr.	Oct.	Berwick
	100	Gondola	140,000	65	..	77,500	Apr.	Feb. '70	Bethlehem Steel
	259	Box	140,000	60	..	.....	Aug.	Feb.-Mar. '70	ACF
	16	Box	200,000	60	..	.....	Aug.	Feb.-Mar. '70	ACF
	100	DFB Ins. Box	140,000	50	..	.....	Apr.	Oct.	Fruit Growers Express
	17	Box	200,000	86	..	.....	Oct.	Nov.	Greenville Steel Car
	55	Box	140,000	86	..	.....	Nov.	Feb. '70	Greenville Steel Car
	55	Caboose	.....	30	..	55,000	Apr.	Mar. '70	International Car
	263	Auto Rack	140,000	89	..	.....	June-Dec.	June '69-Feb.'70	Whitehead & Kales
	53	Auto Rack	140,000	89	..	.....	Oct.-Dec.	Oct.'69-Feb.'70	Portec
	38	Auto Rack	140,000	89	..	.....	June-Dec.	Dec.'69-Feb.'70	Darby Corp.
	100	Gondola	140,000	65	6	71,300	Apr.	Oct.-Nov.	Greenville Steel Car
	7	Hi-Cube Box	200,000	86	6	119,000	Dec.	Mar. '70	Greenville Steel Car
	2	Hi-Cube Box	140,000	86	6	117,500	Nov.	Feb. '70	Greenville Steel Car
	40	Airslide Cov. Hopper	.....	48	11	69,600	Aug.-Nov.	Sept.-Dec.	General American
	125	Gondola	140,000	65	6	79,100	Dec.	Feb.-Mar. '70	Bethlehem
Chicago & Illinois Midland	175	Gondola	200,000	..	..	63,000	Nov.	Feb.-Mar. '70	Thrall Car
Chicago & North Western	50	Coil Trough	200,000	49	11	172,000	Jan.	Oct.	Thrall Car
	55	Cov. Hopper	200,000	41	2	61,400	Jan.	June	Pullman-Standard
	100	Ins. Box	140,000	50	6	80,000	Jan.	Oct.	Fruit Growers Express
	14	Cov. Hopper	140,000	34	9	51,400	Feb.	June	ACF
	50	Box	140,000	50	6	73,200	Feb.	Dec.	Berwick Forge
	14	Box	140,000	86	6	117,000	Feb.	Nov.	Thrall Car
	10	Box	200,000	86	6	117,000	Apr.	Oct.	Greenville Steel Car
Chicago, Burlington & Quincy	5	Box	.....	86	6	.....	Dec.	Feb. '70	Greenville Steel Car
	200	Box	154,000	50	6	74,000	Dec.	May '70	Berwick Forge
	200	Hopper	200,000	47	11	64,300	Dec.	Apr. '70	Bethlehem Steel
	25	Airslide Cov. Hopper	190,000	48	11	72,300	Dec.	Sept.-Oct. '70	General American
	200	Cov. Hopper	200,000	54	6	63,000	Dec.	June '70	ACF
	5	Box	145,000	86	6	118,000	Aug.	Nov.	Greenville Steel Car
	300	Cov. Hopper	200,000	54	6	63,000	Dec.	Apr. '70	Pullman-Standard
	5	Coil Steel	200,000	48	..	.....	Mar.	Mar.	U.S. Railway Equip.
	25	Caboose	100,000	30	..	.....	Feb.	July-Aug.	International Car
Chicago, Milwaukee, St. Paul & Pacific	200	Box	200,000	60	..	.....	Apr.	....	Pullman-Standard
	500	Box	140,000	50	6	.....	Apr.	....	Pullman-Standard
	200	Cov. Hopper	200,000	54	7	.....	Apr.	....	Pullman-Standard
	3	Box	200,000	60	..	73,500	Dec.	1970	ACF
	6	Box	140,000	60	..	69,500	Dec.	1970	ACF
	12	Flat	110,000	89	4	.....	Dec.	1970	ACF

signaling and M/W statistics

Purchaser	No.	Type	Capacity	Length Ft.	Length In.	Weight	Ordered	Delivery Date	Builder
Chicago, Rock Island & Pacific	150	Wood Chip	.....	59	6 5/8	.....	Apr.	June-July	Gunderson Bros.
	200	Cov. Hopper	200,000	49	6 5/16	61,600	Dec.	Apr.	Pullman-Standard
	30	Airslide Cov. Hopper	200,000	50	4 5/16	72,650	Jan.	Apr.	General American
	200	Cov. Hopper	200,000	49	6 5/16	61,600	Feb.	May	Pullman-Standard
	12	Air Dump	.....	33	0 3/4	66,000	Feb.	Dec.	Difco
	250	Box	140,000	50	6 1/16	76,000	Mar.	July	Pullman-Standard
	30	Flat	140,000	60	..	71,000	Mar.	Dec.	Ortner Freight Car Co.
	10	Box	200,000	86	6	111,000	Apr.	Oct.	Greenville Steel Car
	45	Airslide Cov. Hopper	140,000	29	6	62,200	Apr.	Dec.'69-Jan.'70	General American
	2	Box	200,000	86	6	123,000	Aug.	Feb. '70	Greenville Steel Car
	17	Box	140,000	60	8 5/8	69,400	Sept.	Feb. '70	ACF
	16	Vert-A-Pak	110,000	89	4	113,000	Nov.	June '70	ACF
	10	Cov. Hopper	200,000	53	3	63,400		Oct.-Dec.	ACF
Cities Service Oil Co.	100	Tank	200,000	..	..	.....	Oct.	July-Aug. '70	General American
Delaware & Hudson	200	Box	140,000	50	6	67,000	Apr.	Sept.	Pullman-Standard
Denver & Rio Grande Western	30	Box	146,000	86	6	117,000	Apr.	Nov.	Greenville Steel Car
	6	Box	151,000	60	9	69,400	June	Feb. '70	ACF
	3	Box	190,000	60	9	75,000	June	Feb. '70	ACF
	2	Box	97,000	86	6	123,000	Oct.	Feb. '70	Greenville Steel Car
Detroit, Toledo & Ironton	20	Box	140,000	49	..	78,000	Jan.	Jan.	ACF
	37	Box	150,000	86	6	112,000	Apr.	Sept.	Greenville Steel Car
	12	Box	200,000	60	..	79,000	Aug.	Feb. '70	ACF
	10	Gondola	184,000	50	1	79,000	June	Aug.	Greenville Steel Car
	83	Box	150,000	86	6	112,000	Oct.	Feb. '70	Greenville Steel Car
Detroit Edison	125	Gondola	250,000	50	1	51,800	Sept.	Apr. '70	Magor Railcar
Detroit & Mackinac	100	Box	140,000	50	6	.....	Apr.	....	Pullman-Standard
Duluth, Missabe & Iron Range	4	Cov. Hopper	200,000	39	8	59,100	May	Nov.	ACF
	1	Cov. Hopper	200,000	39	8	59,100	Aug.	Nov.	ACF
E. I. Du Pont	70	Hopper	200,000	58	4 1/8	56,600	July	Jan. '70	Magor Railcar
	29	Tank	200,000	..	..	.....	Jan.-Sept.	Oct.-Feb. '70	General American
	40	Tank	300,000	..	..	.....	Feb.	Apr.	General American
	50	Tank	140,000	..	..	.....	Mar.	Jan. '70	General American
	20	Tank	400,000	..	..	.....	May	Oct. '70	General American
	45	Tank	100,000	..	..	.....	Nov.	May '70	General American
Elgin, Joliet & Eastern	114	Coil Steel Gondola	200,000	48	..	63,000	Mar.	Apr.	U.S. Railway Equipment
	25	Coil Steel Gondola	200,000	48	..	63,000	July	Sept.	U.S. Railway Equipment
Erie Lackawanna	50	Gondola	200,000	52	6	83,800	Jan.	May	Ortner Freight Car
	50	Flat	140,000	53	6	59,000	Jan.	May	Magor Railcar Div.
	200	Gondola	140,000	65	6	71,500	Jan.	June	Greenville Steel Car
	300	Gondola	200,000	52	6	64,800	Jan.	June	Greenville Steel Car
	75	Coil Steel Flat	200,000	53	5	74,500	Jan.	May	Greenville Steel Car
	23	Ins. Box	140,000	50	1	84,000	Jan.	Sept.	Fruit Growers Express
	11	Box	200,000	60	9	86,600	Aug.	Mar. '70	Penn-Central
	13	Box	200,000	86	6	113,000	Nov.	Apr. '70	Greenville Steel Car
Florida East Coast Railway	2	Caboose	.....	..	..	.....	Aug.	Dec.	Southeastern Specialties
	100	Hopper	200,000	45	1 3/4	.....	Sept.	Jan. '70	Greenville Steel Car
	15	Box	140,000	50	6	.....	Sept.	Jan. '70	Berwick Forge
	29	Auto Rack	.....	89	4	85,000	Jan.-July	Mar.-Oct.	Whitehead & Kales
Fruit Growers Express	1000	RBL	140,000	50	6	80,700	July	Feb.-Aug. '70	Company Shops
J. W. Flammer Co.	2	Cov. Hopper	200,000	54	7	62,600	Jan.	Mar.	Pullman-Standard
	2	Cov. Hopper	200,000	54	7	62,100	Apr.	Oct.	Pullman-Standard
	2	Cov. Hopper	200,000	54	7	.....	Nov.	June '70	Pullman-Standard
General American Transportation	5	Cov. Hopper	200,000	54	7	62,900	May	July	Pullman-Standard
Grand Trunk Western	100	Coil Steel	200,000	48	..	.....	June	Oct.-Nov.	U.S. Railway Equip.
	50	Hi-Cube Box	200,000	86	6	111,900	Apr.	Sept.-Oct.	Greenville Steel Car
	174	Hi-Cube Box	140,000	86	6	113,500	June	Dec.'69-Jan.'70	Greenville Steel Car
	26	Flat	140,000	89	4	62,500	Oct.	Oct.	Bethlehem Steel
	300	Box	140,000	50	6	.....	Oct.	June '70	Pullman-Standard
Great Lakes Steel	104	Coil Steel	250,000	38	1	.....	July	4th Qtr.	U.S. Railway Equip.
Great Northern	150	Box	140,000	50	8	76,000	Jan.	4th Qtr.	Pacific Car & Foundry
	20	Caboose	100,000	30	..	55,000	Jan.	3rd Qtr.	International Car
	20	Flat	140,000	61	8	61,000	Feb.	2nd Qtr.	Maxson
	125	Wood Chip	200,000	59	6	69,500	Mar.	4th Qtr.	Ortner Freight Car
	500	Box	140,000	50	8	75,000	Apr.	1st Qtr. '70	Berwick Forge
	20	Airslide Cov. Hopper	200,000	48	11	71,000	Apr.	2nd Qtr.	General American
	175	Mech. Refrig.	140,000	50	10	85,000	Apr.	4th Qtr.	Pacific Car & Foundry
	25	Mech. Refrig.	200,000	50	10	.....	Apr.	4th Qtr.	Pacific Car & Foundry
	15	Auto Rack	140,000	90	..	.....	Aug.	3rd Qtr.	Paragon
	8	Auto Rack	140,000	89	8	.....	Aug.	3rd Qtr.	Paragon
	8	Auto Rack	140,000	89	8	.....	Nov.	1st Qtr.	Whitehead & Kales
	7	Hi-Cube Box	200,000	86	6	113,000	Dec.	2nd Qtr.	Greenville Steel Car
Gulf, Mobile & Ohio	35	Flat	200,000	61	..	82,000	Mar.	June-July	Southern Iron & Equip.
	300	Box	140,000	50	6	59,300	Mar.	Aug.-Sept.	Pullman-Standard
	25	Flat	200,000	61	..	82,000	Apr.	1970	Thrall Car
	300	Box	140,000	50	6	59,300	Apr.	Feb. '70	Pullman-Standard

1969 FREIGHT-TRAIN CAR ORDERS

Purchaser	No.	Type	Capacity	Length Ft.	Length In.	Weight	Ordered	Delivery Date	Builder
GM&O (cont.)	100	Cov. Hopper	200,000	54	6 1/16	62,500	Apr.	June-July '70	Pullman-Standard
	300	Box	140,000	50	6	59,300	Apr.	1971	Pullman-Standard
Illinois Central	100	Wood Chip	.....	49	6	.....	Feb.	June	Company Shops
	100	Box	.....	60	..	.....	Mar.	Aug.	Company Shops
	100	Cov. Hopper	200,000	54	7	64,000	Feb.	May	Pullman-Standard
	700	Box	.....	50	..	.....	Apr.	Aug.-Dec.	Company Shops
	1000	Box	.....	50	..	.....	Apr.	Jan.-Apr. '70	Company Shops
	100	Cabooses	.....	40	..	.....	Apr.	Dec. '69-Feb. '70	Company Shops
	300	Cov. Hopper	200,000	54	7	63,200	June	Sept.	Pullman-Standard
	400	Box	.....	50	..	.....	Dec.	Apr.-June'70	Company Shops
	25	Box	.....	60	..	.....	Dec.	May '70	Company Shops
	100	Flat	.....	60	..	.....	Dec.	Aug.-Sept. '70	Company Shops
	8	Box	.....	86	6	.....	Nov.	Feb. '70	Greenville Steel Car
	9	Box	.....	50	..	.....	Dec.	2nd Qtr. '70	ACF
Kansas City Southern	250	Box	200,000	60	9	.....	Apr.	Feb. '70	Pullman-Standard
	250	Box	140,000	50	6	.....	Apr.	Jan. '70	Pullman-Standard
	75	Gondola	150,000	..	..	.....	Apr.	May '70	Thrall Car
	1	Box	200,000	50	..	65,500	Dec.	1970	ACF
	4	Cov. Hopper	200,000	49	9	62,000	Feb.	Oct. '69	ACF
	1	Box	200,000	60	..	73,500	Sept.	1970	ACF
Lehigh Valley	100	Gondola	195,000	52	6	67,000	Dec.	Mar. '70	Bethlehem Steel
Lockheed Aircraft	2	Flat	25,000	45	..	100,000	Aug.	Dec.	Southern Iron & Equip.
Louisville & Nashville	10	Hi-Cube Box	200,000	86	6	119,000	Dec.	Mar. '70	Greenville Steel Car
	400	Box	140,000	50	6	60,000	Mar.	July	L&N Inv. Corp.
	37	Cov. Hopper	200,000	54	1	53,000	Apr.	May	Magor Railcar
	350	Cov. Hopper	200,000	54	9	64,000	Apr.	Oct.	Pullman-Standard
	372	Box	140,000	50	6	58,000	Apr.	Nov.	Pullman-Standard
	28	Box	200,000	50	6	68,800	Apr.	Dec.	Pullman-Standard
	2	Flat	500,000	44	4	111,000	May	Nov.	Southern Iron & Equip.
	30	Hopper	200,000	66	6	74,500	May	Dec.	Ortner Freight Car
	10	Gondola	200,000	52	6	82,000	Oct.	Feb. '70	Southern Iron & Equip.
	22	Cov. Hopper	200,000	48	11	69,600	Sept.	Dec.	General American
	26	Box	200,000	60	..	94,000	Aug.	Feb. '70	Penn-Central Shops
	500	Hopper	140,000	39	10	52,000	Sept.	Oct.	Bethlehem Steel
	375	Hopper	140,000	39	10	52,000	Oct.	Feb. '70	Bethlehem Steel
	62	Flat	200,000	70	..	87,500	Oct.	Feb. '70	Ortner Freight Car
	40	Hopper	200,000	66	6	74,500	May	Apr. '70	Ortner Freight Car
	350	Box	140,000	50	6	58,000	Apr.	Mar. '70	L&N Inv. Corp.
	1200	Hopper	140,000	42	10	52,000	Apr.-Nov.	Mar.-May '70	Pullman-Standard
	200	Hopper	200,000	46	10	58,000	Dec.	Apr. '70	Bethlehem Steel
	500	Box	140,000	50	6	58,000	Dec.	July '70	Pullman-Standard
	500	Box	140,000	50	6	58,000	Dec.	Oct. '70	ACF
	100	Cov. Hopper	200,000	53	3	66,000	Apr.	June '70	ACF
	50	Box	200,000	50	6	62,000	Apr.	June '70	L&N Inv. Corp.
Maine Central	1	Caboose	88,000	33	10	51,400	Feb.	Nov.	Company Shops
Minnesota, Dakota & Western	100	Box	158,000	50	7	61,800	June	July	National Steel Car
Missouri-Kansas-Texas	10	Airslide Cov. Hopper	200,000	48	11	72,000	Apr.	Sept.	General American
	500	Box	140,000	50	6	59,300	Apr.	1st Qtr. '70	Pullman-Standard
	500	Gondola	200,000	52	6	63,800	Apr.	1st Qtr. '70	Thrall Car
	100	RBL	140,000	50	6	78,500	Apr.	Mar. '70	Pullman-Standard
Missouri Pacific	150	Box	140,000	50	6	62,500	Jan.	Dec.	ACF
	200	Box	200,000	60	8	76,500	Jan.	Dec.	ACF
	200	Cov. Hopper	200,000	41	2	62,500	Jan.	June	Pullman-Standard
	50	Cov. Coil Steel	200,000	49	11½	73,800	Feb.	Oct.	Thrall Car
	100	Cov. Gondola	200,000	52	6	86,200	Apr.	Sept.	Ortner Freight Car
	20	Air Dump	151,000	39	5	68,900	Jan.	Oct.	Magor Railcar
	149	Box	200,000	86	6	117,000	Apr	Nov.	Greenville Steel Car
	2	Box	200,000	86	6	124,000	July	Feb. '70	Greenville Steel Car
	400	Box	200,000	60	8	76,500	Apr.	June '70	ACF
	500	Cov. Hopper	200,000	54	6 3/16	63,000	Apr.	Apr. '70	Pullman-Standard
	100	Ins. Box	140,000	51	6	79,500	Oct.	July '70	Pacific Car & Foundry
	6	Hi-Cube Box	200,000	86	6	119,000	Dec.	Apr. '70	Greenville Steel Car
Monon	100	Cov. Hopper	200,000	34	9	54,800	Jan.	May-June	ACF
Monsanto Co.	17	Tank	200,000	..	..	.....	Jan.-Apr.	Mar.-Oct.	General American
	18	Tank	250,000	..	..	.....	Feb.-Oct.	Sept. '69-Mar. '70	General American
	1	Tank	100,000	..	..	.....	Aug.	Feb. '70	General American
Norfolk & Western	300	Coil Steel	200,000	48	..	.....	Apr. '69	3rd Qtr. '70	U.S. Railway Equip.
	1000	Gondola	200,000	52	6	67,100	Apr.	1970	Bethlehem Steel
	1500	Hopper	200,000	45	..	59,500	Jan.	May-Dec.	Company Shops
	32	Box	200,000	60	5⅝	75,200	Mar.	Dec. '69-Jan. '70	ACF
	21	Hi-Cube Box	200,000	86	6	123,000	Apr.	Dec.	Greenville Steel Car
	10	Hi-Cube Box	200,000	86	6	112,000	Apr.	Dec.	Thrall Car
	78	Hi-Cube Box	200,000	86	6	111,000	Apr.	Sept.	Greenville Steel Car
	750	Box	140,000	50	5¾	65,600	Apr.	June-Aug. '70	ACF
	750	Cov. Hopper	200,000	54	6 3/16	65,000	Apr.	Aug.-Oct. '70	Pullman-Standard
	21	Box	140,000	60	8⅝	69,400	July	Feb. '70	ACF
	5	Box	200,000	60	8⅝	73,200	July	Feb. '70	ACF
	29	Box	140,000	60	8	89,000	July	Dec. '69-Jan. '70	Berwick Forge
	4000	Hopper	200,000	45	..	59,500	Sept.	Dec. '69-Apr. '71	Company Shops
	7	Box	200,000	50	6	73,500	Dec.	June '70	ACF
	1000	Box	140,000	50	6	.....	Apr.	.....	Pullman-Standard
	1500	Cov. Hopper	200,000	54	7	.....	Apr.	Sept.-Dec. '70	Pullman-Standard
North American Car Corp.	295	Cov. Hopper	200,000	54	7	61,400	Apr.	Jan. '70	Pullman-Standard
	5	Cov. Hopper	200,000	57	7	67,200	Apr.	Sept.	Pullman-Standard
	11	Tank	.....	..	..	.....	July	Oct.	Hawker Siddeley
	17	Flat	140,000	89	4	61,100	Apr.	Apr.-May	Bethlehem Steel
	983	Tank	200,000	..	..	.....	Feb.-Nov.	Aug. '69-June '70	Company Shops
	20	Airslide Cov. Hopper	.....	48	11	69,600	Feb.	June	General American
Northern Pacific	145	Flat	140,000	60	..	64,200	Dec. '68	Dec. '69	General Steel Ind.
	5	Flat	140,000	56	8½	72,000	Oct.	Dec.	General Steel Ind.
	50	Mech. Refrig.	133,000	50	9	.....	Jan.	June	Pacific Car & Foundry
	100	Wood Chip	195,000	59	6⅝	67,700	Jan.	June	Gunderson Bros. Engr.
	51	Mech. Refrig.	183,000	53	3⅛	75,500	Apr.	Dec. '69-Jan. '70	ACF
	200	Cov. Hopper	200,000	49	9⅛	63,200	Nov.	Apr.	ACF
Penn Central	206	Box	140,000	60	..	140,000	Dec. '68	Mar. '69	Company Shops
	140	Box	200,000	60	..	200,000	Mar. '69	Apr. '69	Company Shops
	142	Box	200,000	60	..	200,000	May '69	June '69	Company Shops
	400	Cov. Hopper	200,000	..	..	200,000	July '69	Nov. '69	Company Shops
	300	Cov. Gondola	200,000	52	..	200,000	Sept. '69	Oct. '69	Company Shops
	375	Gondola	200,000	52	..	200,000	Oct. '69	Dec. '69	Company Shops
	98	Box	200,000	60	..	200,000	Oct. '69	Dec. '69	Company Shops
	120	Box	140,000	60	..	140,000	Dec.	Dec.	Company Shops
	165	Box	140,000	50	..	140,000	Feb.	Apr.	Company Shops
	65	Box	140,000	50	..	140,000	Apr.	May	Company Shops
	50	Box	140,000	50	..	140,000	May	May	Company Shops
	500	Coil Steel	200,000	55	..	200,000	May	Dec.	Company Shops

Purchaser	No.	Type	Capacity	Length Ft.	Length In.	Weight	Ordered	Delivery Date	Builder
Penn Central (cont.)	270	Box	140,000	86	..	140,000	Aug.	Oct.	Thrall Car
	113	Box	200,000	86	..	200,000	Sept.	Oct.	Pullman-Standard
	100	Gondola	200,000	52	6	59,000	Nov.	Feb. '70	Bethlehem Steel
	16	Hi-Cube Box	140,000	86	6	117,500	Nov.	Feb. '70	Greenville Steel Car
	126	Caboose	.....	..	..	.....	Aug.	Dec.	Company Shops
PPG Industries	3	Hi-Cube Box	140,000	86	6	.....	Nov. '69	Feb. '70	Greenville Steel Car
	12	Tank	200,000	..	..	.....	Aug.	Dec.	General American
	55	Tank	250,000	..	..	.....	Sept.	Feb. '70	General American
Pullman-Standard	50	Box	155,400	66	6	107,600	June	Apr. '70	Berwick Forge
Reading	200	Box	154,000	50	9	63,500	Dec. '68	Mar. '69	Company Shops
	150	Cov. Hopper	200,000	41	1/2	62,300	Mar.	June	Company Shops
	100	Gondola	200,000	52	6	65,000	May	July	Company Shops
Richmond, Fredericksburg & Potomac	110	Box	140,000	50	6	77,000	Mar.	Nov.-Dec.	Fruit Growers Express
	3	Caboose	.....	31	2	50,800	Oct.	Mar. '70	International Car
	6	Caboose	.....	31	2	50,800	Nov.	Mar. '70	Southern Iron & Equip.
Relco Tank Line	48	Tank	200,000	..	..	.....	Feb.-Dec.	Apr.-Dec.	General American
	10	Tank	200,000	..	..	.....	Nov.	June '70	General American
St. Louis San Francisco	9	Hi-Cube Box	200,000	86	6	111,900	Dec.	Mar. '70	Greenville Steel Car
	8	Caboose	100,000	30	..	54,200	Jan.	July	International Car
	4	Airslide Cov. Hopper	.....	48	11	69,600	Feb.	May	General American
	1	Flat	225,000	44	..	109,900	Mar.	Nov.	Thrall Car
	5	Box	200,000	86	6	110,000	Apr.	Oct.	Greenville Steel Car
	25	Cov. Hopper	140,000	29	6	56,000	Apr.	Jan.-Feb. '70	General American
	8	Cov. Hopper	200,000	48	11	72,500	June	Jan. '70	General American
	200	Box	140,000	50	6	61,000	Sept.	Feb. '70	Pullman-Standard
	150	Gondola	200,000	52	6	65,000	Sept.	Mar.-May '70	Greenville Steel Car
St. Louis-Southwestern	25	Flat	140,000	89	4	61,100	Feb.	Feb.	Bethlehem Steel
	13	Hi-Cube Box	200,000	86	6	119,000	Dec.	Apr. '70	Greenville Steel Car
	300	Cov. Hopper	200,000	49	9	62,000	May	1970	ACF
Seaboard Coast Line	1000	Box	140,000	50	6	62,200	Mar.	Sept.-Dec.	Pullman-Standard
	400	Hopper	140,000	50	10	.....	Apr.	Apr.-May '70	Pullman-Standard
	100	Gondola	140,000	55	..	.....	Apr.	June '70	Pullman-Standard
	1000	Box	140,000	50	6	.....	Dec.	Sept.-Nov. '70	Pullman-Standard
	4	Hi-Cube Box	200,000	86	6	119,000	Dec.	Mar. '70	Greenville Steel Car
Soo Line	50	Gondola	200,000	52	6	64,000	Nov.	Mar. '70	Thrall Car
	50	Hopper	200,000	45	..	61,000	Nov.	Mar. '70	Darby Corp.
	170	Box	154,000	50	6	63,000	Nov.	Apr. '70	Company Shops
Southern	1000	Box	140,000	50	6	63,700	Mar.	July-Aug.	Pullman-Standard
	200	Wood Chip	200,000	68	9	82,500	Feb.	Nov.-Dec.	Magor Railcar
	53	Box	140,000	60	8	90,900	Jan.	Jan.-Sept.	Berwick Forge
	50	Box	200,000	60	..	74,400	Apr.	Jan.-Feb. '70	ACF
	7	Hi-Cube Box	140,000	86	6	124,000	Apr.	Feb. '70	Greenville Steel Car
	600	Cov. Hopper	200,000	44	9	63,000	Apr.	July-Aug. '70	ACF
	1000	Box	140,000	50	6	62,700	Apr.	May-July '70	Pullman-Standard
	200	Flat	140,000	53	6	62,000	Apr.	3rd Qtr. '70	Greenville Steel Car
	600	Gondola	200,000	52	6	64,200	Apr.	Sept.-Oct. '70	Pullman-Standard
	600	Hopper	200,000	50	11	64,000	Apr.	May-Oct. '70	Greenville Steel Car
	190	Caboose	.....	32	10	52,900	Apr.	1969-1972	Gnatt Mfg. Corp.
Southern Pacific*	75	Caboose	100,000	30	..	52,200	May	Feb.-Apr. '70	International Car
	500	Cov. Hopper	200,000	49	9	62,000	May	July-Aug.	ACF
	119	Flat	110,000	89	4	53,300	Oct.	1970	ACF
	400	Flat	140,000	53	..	53,000	Nov.	1970	ACF
	25	Box	128,000	60	8	90,000	Jan.	Sept.	Berwick Forge
	15	Hi-Cube Box	200,000	86	6	120,500	Apr.	Nov.	Greenville Steel Car
	1000	Hopper	200,000	31	11¼	58,000	Apr.	Apr.-Aug. '70	Greenville Steel Car
	10	Hi-Cube Box	200,000	86	6	127,500	Aug.	Nov.	Greenville Steel Car
	30	Hi-Cube Box	140,000	86	6	122,000	Aug.	Feb. '70	Greenville Steel Car
	150	Flat	140,000	89	4	61,100	Aug.	Aug.-Sept.	Bethlehem Steel
	50	Flat	140,000	89	4	60,600	Dec.	Jan. '70	Bethlehem Steel
	900	Box	.....	..	..	.....	Apr.	.....	Pacific Car & Foundry
	1000	Box	.....	..	..	.....	Mar.	.....	Gunderson Bros.
Spokane, Portland & Seattle	500	Box	140,000	50	7⅝	56,800	May	Feb. '70	Gunderson Bros. Engrg.
Texas Gulf Sulphur	75	Cov. Hopper	200,000	54	7	63,500	Sept.	Oct.	Pullman-Standard
Trailer Train	878	Flat	130,000	89	4	.....	Jan.-Apr.	Feb.-May	Bethlehem Steel
	93	Flat	151,000	60	..	68,000	Jan.	Feb.	Pullman-Standard
	64	Flat	118,000	89	4	61,000	Feb.	Mar.	ACF
	200	Flat	130,000	89	4	73,000	Mar.-Apr.	Apr.-May	ACF
	250	Flat	150,000	89	4	70,000	June	Aug.	ACF
	216	Flat	118,000	89	4	61,000	June-Sept.	Aug.-Oct.	ACF
	25	Flat	150,000	89	4	70,000	Dec.	Dec.	ACF
	120	Flat	150,000	89	4	.....	Dec.	Jan. '70	ACF
	1290	Flat	130,000	89	4	.....	June-Dec.	July-Dec.	Bethlehem Steel
	273	Flat	180,000	68	..	.....	Dec.	Dec. '69-Jan. '70	Bethlehem Steel
	140	Flat	130,000	89	4	74,000	Dec.	Jan. '70	Bethlehem Steel
	96	Flat	151,000	60	..	68,000	Jan.-Apr.	Feb.-May	Pullman-Standard
	48	Flat	130,000	89	4	74,000	Apr.	May	Pullman-Standard
	246	Flat	180,000	68	..	82,700	Apr.	Oct.	Pullman-Standard
	100	Flat	147,000	60	..	72,000	Jan.-Apr.	Feb.-May	Pullman-Standard
	373	Flat	118,000	89	4	61,000	Jan.-Apr.	Feb.-May	Pullman-Standard
	430	Flat	150,000	89	4	70,000	Jan.-Apr.	Feb.-May	Pullman-Standard
	7	Flat	150,000	60	..	67,000	Jan.-Apr.	Feb.-May	Pullman-Standard
	1193	Flat	118,000	89	4	61,000	June-Sept.	July-Oct.	Pullman-Standard
	43	Flat	118,000	89	4	61,000	Dec.	Jan. '70	Pullman-Standard
	30	Flat	147,000	60	..	72,000	June	July	Pullman-Standard
	200	Flat	130,000	89	4	74,000	Dec.	Dec.	Pullman-Standard
	18	Flat	151,000	60	..	68,000	June-Dec.	July-Dec.	Pullman-Standard
	19	Flat	151,000	60	..	68,000	Dec.	Jan. '70	Pullman-Standard
Transport Leasing	10	Cov. Hopper	200,000	54	7	64,200	June	Oct.	Pullman-Standard
	12	Cov. Hopper	200,000	57	7	67,200	Sept.	Sept.	Pullman-Standard
	32	Cov. Hopper	200,000	57	7	67,200	Nov.	Dec.	Pullman-Standard
	30	Cov. Hopper	200,000	54	7	.....	Nov.	June '70	Pullman-Standard
	2	Flat	140,000	82	..	48,900	Dec.	Dec.	Pullman-Standard
	10	Cov. Hopper	200,000	54	7	62,700	Feb.	May	Pullman-Standard
	110	Cov. Hopper	200,000	57	7	67,200	Apr.	Aug.-Sept.	Pullman-Standard
	150	Cov. Hopper	200,000	54	7	62,800	Apr.	July-Aug.	Pullman-Standard
	300	Ins. Box	140,000	50	1	.....	Apr.	Feb. '70	Pullman-Standard
	100	Ins. Box	140,000	50	1	.....	Apr.	Mar. '70	Pullman-Standard
Union Pacific	400	Ins. Box	200,000	60	3	96,000	Jan.	June-Aug.	Pullman-Standard
	400	Ins. Box	200,000	60	3	.....	Apr.	Mar.-Apr. '70	Pullman-Standard
	300	Ins. Box	140,000	51	8	.....	Apr.	July-Aug. '70	Pullman-Standard
	500	Cov. Hopper	250,000	54	7	.....	Apr.	Feb.-Apr. '70	Pullman-Standard
	100	Hopper	180,000	45	..	.....	Apr.	July '70	Bethlehem Steel
	100	Wood Chip Gondola	180,000	..	..	.....	Jan.	Sept.	Magor Railcar
	100	Gondola	180,000	..	..	.....	Apr.	Feb. '70	Magor Railcar
	100	Gondola	180,000	..	..	.....	Apr.	July '70	Gunderson Bros. Engrg.

*SP reports that in 1969 it acquired a total of 4,962 freight cars and 75 cabooses.

1969 FREIGHT-TRAIN CAR ORDERS

Purchaser	No.	Type	Capacity	Length Ft.	Length In.	Weight	Ordered	Delivery Date	Builder
UP (cont.)	100	Gondola	180,000	65	..	.....	Apr.	June-July '70	Magor Railcar
	100	Gondola	180,000	52	6	.....	Apr.	June-July '70	Thrall Car
	100	Gondola	250,000	..	..	.....	Apr.	Oct.-Nov. '70	Thrall Car
	25	Cov. Hopper	180,000	..	..	.....	Mar.	May	General American
	9	Box	180,000	86	..	.....	Aug.	Feb. '70	Greenville Steel Car
	1	Flat	140,000	60	..	.....	May	Oct.	Maxson Corp.
	21	Box	180,000	60	9	.....	Oct.	Feb.-Apr. '70	ACF
	3	Box	180,000	60	9	.....	Dec.	June '70	ACF
	600	Mech. Refrig.	140,000	50	..	.....	Apr.	Feb.-Apr. '70	Pacific Car & Foundry
	100	Flat	140,000	53	6	.....	Apr.	Jan.-June '70	Company Shops
	100	Flat	180,000	62	..	.....	Apr.	June-Aug. '70	Company Shops
	250	DFB Box	140,000	50	..	.....	Apr.	Oct.-Dec. '70	Company Shops
	200	Box	180,000	60	9	.....	Apr.	Mar.-June '70	Company Shops
	200	Box	180,000	60	9	.....	Apr.	June-Sept. '70	Company Shops
	300	Box	140,000	50	6	.....	Apr	Jan.-Apr. '70	Company Shops
	150	Cov. Hopper	180,000	..	..	.....	Apr.	Jan.-Apr. '70	Company Shops
	1000	Box	140,000	50	..	.....	Apr.	Jan.-Dec. '70	Company Shops
	100	Wood Chip	200,000	60	6 1/8	67,100	June	Mar. '70	Magor Railcar
	200	Box	200,000	50	6	81,000	Feb.	Feb. '70	Southern Iron & Equip.
United Grain Corp.	1	Cov. Hopper	200,000	54	7	63,600	Aug.	Oct.	Pullman-Standard
United States Railway Leasing	400	RBL Box	140,000	52	6	.....	July	Sept.-Dec.	U.S. Railway Equip.
	150	RBL Box	140,000	52	6	.....	Oct.	1st Qtr. '70	U.S. Railway Equip.
Various Industrial Orders	1973	Cov. Hopper	.....	..	..	.....	1969	1969-1970	ACF
	1558	Tank	.....	..	..	.....	1969	1969-1970	ACF
	5	Flat	.....	..	..	.....	1969	1969	ACF
	204	Tank	200,000	..	..	.....	Jan.-Apr.	Apr.-June '70	General American
	17	Tank	100,000	..	..	.....	May-Oct.	Mar.-June '70	General American
	236	Hopper	.....	..	..	.....	Feb.-Dec.	Dec. '69-May '70	Thrall Car
	157	Box	140,000	50	6	.....	Apr.	Nov. '69-Jan. '70	Thrall Car
	10	Box	200,000	50	6	.....	Apr.	Jan. '70	Thrall Car
	175	Gondola	200,000	..	..	.....	Nov.	Apr. '70	Thrall Car
	2	Flat	250,000	..	..	.....	Feb.-Mar.	Dec. '69-Jan. '70	Thrall Car
	2	Flat	347,500	..	..	.....	Mar.-Apr.	Jan.-Dec. '70	Thrall Car
	4	Stock	143,000	85	3 3/4	119,100	Jan.	May	Ortner Freight Car
	300	Hopper	200,000	50	2	.....	1969	1970	Ortner Freight Car
	2,220	Tank	.....	..	..	.....	.....	.....	Various
Western Maryland	15	Ins. Box	140,000	50	6	83,700	Apr.	Nov.	Fruit Growers Express
	15	Box	200,000	60	8 5/8	76,800	Apr.	Dec.	ACF
	10	Box	200,000	60	8 5/8	84,800	Apr.	Dec.	ACF
	40	Gondola	200,000	52	11	68,800	May	Aug.	Reading Dispatch, Inc.
	10	Gondola	200,000	52	11	80,800	May	Aug.	Reading Dispatch, Inc.
	50	Cov. Hopper	200,000	36	11	53,800	Apr.	Apr. '70	ACF
West Coast Resources	1	Cov. Hopper	200,000	54	7	63,600	Aug.	Oct.	Pullman-Standard
Western Pacific	17	Box	200,000	60	..	.....	Oct.	June '70	Pullman-Standard
	100	Box	140,000	50	..	.....	Nov.	July '70	Pacific Car & Foundry
	8	Box	200,000	60	..	.....	Aug.	June '70	Maxson Corp.
	5	Caboose	100,000	30	..	47,900	July	Oct.	International Car

1969 FREIGHT-TRAIN CAR ORDERS—CANADA

Purchaser	No.	Type	Capacity	Length Ft.	Length In.	Weight	Ordered	Delivery Date	Builder
Acres Canadian Bechtel	1	Dep. Center Flat	150,000	..	..	.....	Sept.	Feb. '70	Hawker Siddeley
	1	Dep. Center Flat	500,000	..	..	.....	Sept.	Feb. '70	Hawker Siddeley
Canadian General Transit	261	Tank	.....	..	..	.....	Jan.-Dec.	Jan.-Dec.	Hawker Siddeley
	64	Tank	.....	..	..	.....	Jan.-Dec.	Jan.-Feb. '70	Hawker Siddeley
Canadian National	450	Flat	156,000	51	6	64,000	Feb.	Aug.-Sept.	Marine Industries Ltd.
	50	Cont. Flat	161,000	82	..	58,200	Mar.	Sept.-Oct.	National Steel Car
	150	Gondola	200,000	52	6	62,900	Mar.	Sept.-Oct.	National Steel Car
	100	Flat	200,000	62	6	60,000	Apr.	Nov.-Dec.	Marine Industries Ltd.
	200	Gondola	200,000	54	4	58,000	May	Jan. '70	Marine Industries Ltd.
	115	Woodchip	164,000	61	7	55,900	July	Nov.-Dec.	National Steel Car
	1000	Cov. Hopper	200,000	59	0	61,000	Aug.	Mar.-Sept. '70	Hawker Siddeley
	500	Box	160,000	50	6	60,000	Oct.	Feb.-Mar. '70	National Steel Car
	5	Cov. Hopper	200,000	59	..	60,000	Nov.	Aug. '70	Hawker Siddeley
Canadian Pacific	500	Box	157,800	50	6	62,200	Jan.	Apr.-Aug.	National Steel Car
	100	Mech. Refrig.	134,000	44	..	85,900	Jan.	Oct.-Dec.	National Steel Car
	4	Flat	202,800	81	2	60,200	Jan.	July	National Steel Car
	52	Flat	90,000	89	4	82,400	July	Dec.	National Steel Car
	100	Flat	200,000	81	2	63,000	Oct.	Jan.-Mar. '70	National Steel Car
	150	Gondola	191,400	65	6	71,600	Jan.	June-July	Marine Industries, Ltd.
	250	Flat	158,500	56	6	61,500	Apr.	Sept.-Nov. '69	Marine Industries, Ltd.
	400	Cov. Hopper	198,000	48	11	65,000	Sept.	Jan.-Apr. '70	Marine Industries, Ltd.
	578	Gondola	210,400	48	..	52,600	Mar.-July	Sept.'69-Feb.'70	Hawker Siddeley
	100	Gondola	161,600	64	..	58,400	Apr.	Aug.-Nov.	IEC-Holden Ltd.
	30	Flat	166,100	56	6	53,900	May	June	IEC-Holden Ltd.
	40	Cov. Hopper	215,900	19	6	47,100	Apr.	Nov.-Dec.	Davie Shipbuilding Ltd.
	15	Hi-Cube Box	145,100	86	6	117,900	Apr.	Nov.	Greenville Steel Car
	52	Auto Rack	90,000	89	4	82,300	July	Dec.	National Steel Car
	34	Box	200,000	60	9	63,000	Aug.	Jan.-Feb. '70	Penn Central Shops
	30	Flat	180,000	89	4	88,000	July	Nov.	ACF
	30	Auto Rack	.....	89	4	.....	July	Nov.	Whitehead & Kales
	135	Box	140,000	60	9	70,000	Aug.	Mar. '70	ACF
	24	Box	140,000	60	9	80,000	Aug.	Mar. '70	ACF
N.A.C. (Canada) Ltd.	2	Flat	203,000	82	..	59,900	May	Oct.	National Steel Car
Pacific Great Eastern	100	Box	163,000	50	6	57,000	Feb.	Apr.	National Steel Car
	10	Ins. Box	146,000	49	5	73,100	Apr.	Nov.	National Steel Car
Procor, Ltd.	50	Hopper	200,000	28	..	58,500	Mar.	Dec.	Company Shops
	275	Gondola	200,000	52	4	58,000	May	Dec.	Hawker Siddeley
	60	Cov. Hopper	.....	50	10	64,000	July	Sept.'69-Mar.'70	Company Shops
	200	Box	138,000	50	6	82,000	Sept.	June '70	Pullman-Standard
	100	Box	138,000	50	6	82,000	Nov.	June '70	Pullman-Standard
Quebec Cartier Mining	2	Flat	140,000	56	6	56,500	Jan.	Apr.	Marine Industries, Ltd.
Singmaster & Breyer	12	Cov. Hopper	152,000	28	3	32,800	July '69	Nov. '70	National Steel Car
The Steel Co. Ltd.	25	Gondola	140,000	48	..	70,400	Jan.	May	Marine Industries Ltd.
Texas Gulf Sulphur	55	Cov. Hopper	200,000	41	3	58,000	July	Dec.	National Steel Car

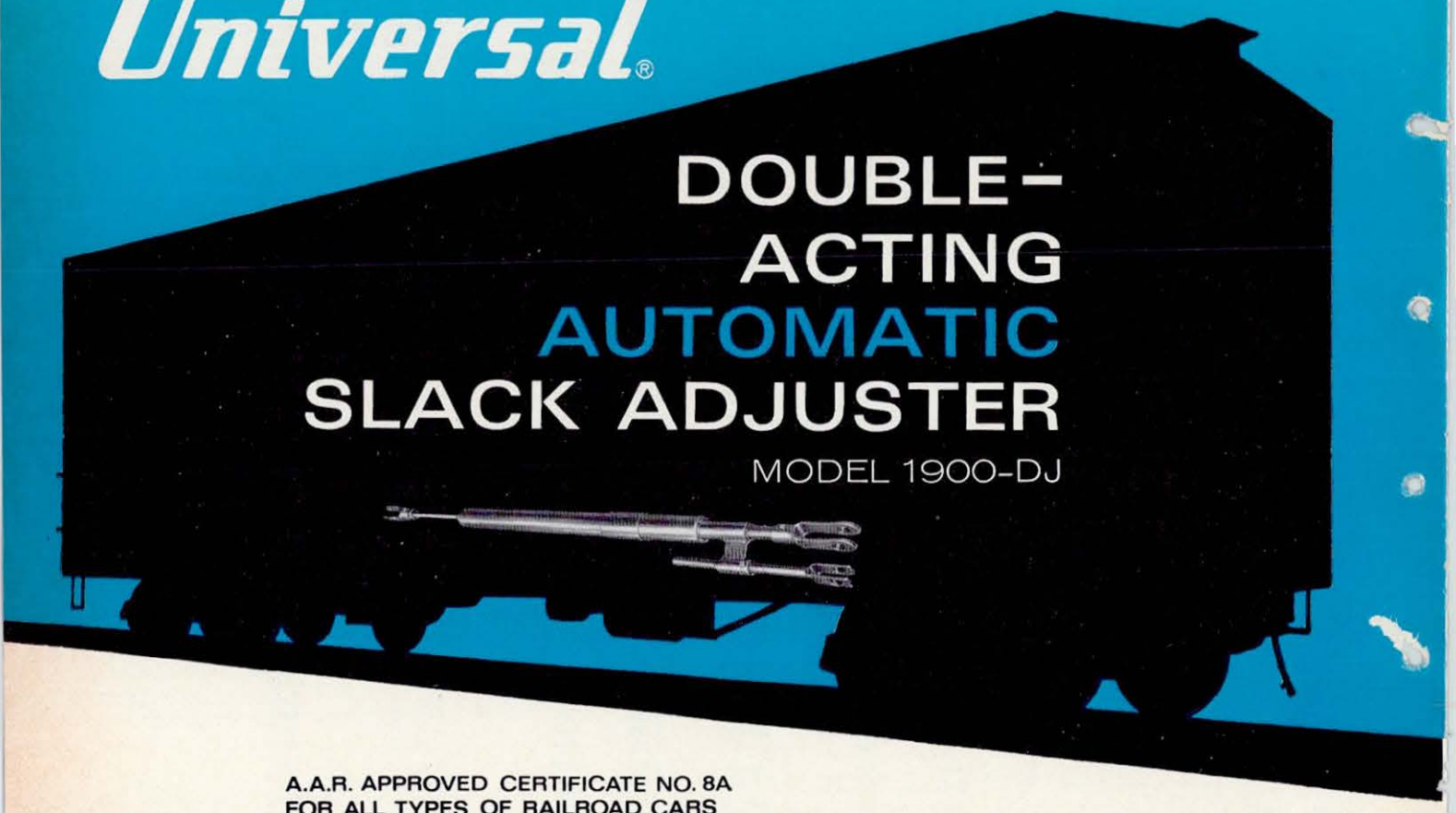
1966 LOCOMOTIVE ORDERS

Purchaser	No.	Wheel Arrangement	Service	Weight Lb.	Horsepower	Order Date	Delivery Date	Builder
Alton & Southern	6	B-B	.....	.....	.....	.....	.....	EMD
Atchison, Topeka & Santa Fe	25	B-B	Gen. Pur.	.....	3,600	Jan.	Apr.-June	EMD
	20	B-B	Gen. Pur.	.....	2,300	Jan.	Apr.-June	EMD
	25	B-B	Gen. Pur.	.....	3,300	Jan.	May-Aug.	General Electric
	20	B-B	Gen. Pur.	.....	2,250	Jan.	May-Aug.	General Electric
	61	B-B	Gen. Pur.	.....	2,000	Nov.	June-Sept. '70	EMD
	10	B-B	Gen. Pur.	.....	3,600	Nov.	June-Sept. '70	EMD
	49	B-B	Sw.	.....	2,250	Nov.	Mar.-July '70	General Electric
Atlanta & St. Andrews Bay	1	B-B	Frt.	250,000	2,300	Dec.	June '70	EMD
Atlanta & West Point	4	B-B	Frt.	265,000	3,000	Nov.	May '70	EMD
Baltimore & Ohio	40	B-B	Gen. Pur.	276,000	3,000	Jan.	Feb.-Apr.	EMD
	4	C-C	Gen. Pur.	406,000	3,000	Jan.	Apr.	EMD
Bethlehem Steel	1	B	Sw.	160,000	520	Feb.	1970	General Electric
Birmingham Southern	1	B-B	Sw.	249,500	1,000	July	Nov.	EMD
Chesapeake & Ohio	30	B-B	Gen. Pur.	283,500	2,250	Feb.	Sept.-Nov.	General Electric
	20	B-B	Gen. Pur.	276,000	2,300	Feb.	June-July	EMD
	6	C-C	Gen. Pur.	406,000	3,000	Jan.	Apr.	EMD
Chicago, Burlington & Quincy	4	C-C	Rd. Frt.	390,000	3,300	Dec.	.....	General Electric
	6	C-C	Rd. Frt.	390,000	3,600	Dec.	July '70	EMD
	15	B-B	Sw.	246,000	1,000	Dec.	Oct.-Nov. '70	EMD
Chicago & North Western	41	C-C	Rd. Sw.	386,000	3,600	Dec.	Feb.	EMD
Chicago, Rock Island & Pacific	5	B-B	Frt.	256,000	3,300	Jan.	Jan.	General Electric
	10	B-B	Frt.	256,000	3,300	Mar.	May	General Electric
	15	B-B	Frt.	256,000	3,000	Dec. '68	Jan. '69	EMD
Clinchfield	6	C-C	Rd. Frt.	392,000	3,000	Jan.	Feb.	EMD
Denver & Rio Grande Western	5	B-B	Gen. Pur.	276,000	3,000	Apr.	Nov.	EMD
Detroit, Toledo & Ironton	2	B-B	Gen. Pur.	263,000	2,000	Apr.	July	EMD
	3	C-C	Gen. Pur.	372,000	2,000	Apr.	Aug.	EMD
Elgin, Joliet & Eastern	6	C-C	Rd.	356,000	2,000	July	Jan. '70	EMD
Erie Lackawanna	9	C-C	Rd.	352,000	3,300	Feb.	Aug.	General Electric
	19	C-C	Rd.	342,000	3,600	Feb.	June	EMD
Florida East Coast	10	B-B	Frt.	265,000	3,000	Dec.	Oct.	EMD
Georgia	1	B-B	Frt.	265,000	3,000	.....	.....	
Getty Oil	1	B	Sw.	100,000	210	Feb.	Aug.	General Electric
Great Northern	6	C-C	.....	385,000	3,600	Mar.	2nd Qtr.	EMD
	6	C-C	.....	385,000	3,300	Feb.	2nd Qtr.	General Electric
	8	C-C	.....	385,000	3,600	Apr.	3rd Qtr.	EMD
S. J. Grove	2	C-C	Rd. Sw.	420,000	3,300	Aug.	Oct.	General Electric
Gulf, Mobile & Ohio	20	....	Gen. Pur.	254,000	2,000	Mar.	Aug.	EMD
Illinois Central	10	....	Gen. Pur.	350,000	3,000	Apr.	Aug.-Sept.	EMD
	13	....	Gen. Pur.	368,000	3,000	Apr.	Aug.-Sept.	EMD
	20	....	Gen. Pur.	340,000	3,000	Apr.	Jan.-Feb. '70	EMD
	5	....	Gen. Pur.	368,000	3,000	Apr.	Jan.-Feb. '70	EMD
	5	....	Gen. Pur.	350,000	3,000	Oct.	Feb. '70	EMD
Indiana Harbor Belt	1	B-B	Sw	248,000	1,500	Nov.	Dec.	EMD
Lehigh Portland Cement	1	B	Sw.	90,000	260	Nov.	1970	General Electric
Louisville Gas & Electric	1	B-B	Sw.	220,000	600	June	1970	General Electric
Louisville & Nashville	15	C-C	Frt.	378,000	3,000	Apr.	Dec.	General Electric
	5	C-C	Frt.	380,000	3,000	Apr.	Apr. '70	EMD
	10	B-B	Sw.	253,000	1,500	Apr.	Apr. '70	EMD
	10	B-B	Gen.Pur.	260,000	2,000	Dec.	July '70	EMD
	10	B-B	Gen. Pur.	260,000	2,000	Dec.	Sept. '70	EMD
	10	C-C	Frt.	378,000	3,000	Apr.	Sept. '70	EMD
Missouri-Kansas-Texas	20	B-B	Frt.	256,000	3,000	Apr.	Dec.	EMD
	4	B-B	Rd. Sw.	248,000	2,000	Apr.	Dec.	EMD
Missouri Pacific	6	B-B	Sw.	248,000	1,500	Jan.	May	EMD
	6	B-B	Sw.	248,000	1,500	June	Feb. '70	EMD
	4	C-C	Frt.	363,000	3,000	Sept.	Apr. '70	General Electric
	16	C-C	Frt.	368,000	3,000	Apr.	Jan. '70	EMD
Monon	8	B-B	Frt.	272,000	2,250	June	.....	General Electric
Monongahela	5	B-B	Rd. Sw.	290,000	2,000	Feb.	Sept. '70	EMD
Norfolk & Western	19	B-B	Gen. Pur.	420,000	3,600	Mar.	May-June	EMD
	9	C-C	Gen. Pur.	392,000	3,300	Mar.	Aug.	General Electric
	50	B-B	Gen. Pur.	280,000	3,000	Apr.	May-Aug. '70	General Electric
	50	C-C	Gen. Pur.	420,000	3,600	Apr.	Dec. '69-Mar. '70	EMD
Northern Pacific	10	C-C	Rd. Sw.	390,000	3,300	Jan.	July	General Electric
Penn Central	150	B-B	Gen. Pur.	264,000	2,000	Apr.	June-Nov.	EMD
	15	B-B	Frt.	277,000	3,000	Oct.	Dec.	EMD
	35	C-C	Gen. Pur.	390,500	2,000	Oct.	Apr.-May '70	EMD
	43	B-B	Gen. Pur.	264,000	2,000	Oct.	May-June '70	EMD
	19	C-C	Gen. Pur.	390,500	2,250	Oct.	Mar.-May '70	General Electric
Penn-Reading-Seashore	5	B-B	Rd. Sw.	256,000	2,000	.....	Mar.	EMD
Reading	10	B-B	Sw.	253,658	1,500	Apr.	Sept.	EMD
St. Louis-San Francisco	14	C-C	Frt.	386,000	3,600	Apr.	Sept.-Oct.	EMD
	6	C-C	Frt.	386,000	3,600	Apr.	Dec. '69-Jan. '70	EMD
	8	B-B	Frt.	254,800	3,000	Apr.	Aug.-Sept.	General Electric
	16	B-B	Sw.	248,000	1,500	Apr.	Dec. '69-Jan. '70	EMD
Seaboard Coast Line	30	B-B	Rd. Sw.	270,000	3,300	Apr.	1970	General Electric
	18	B-B	Rd. Sw.	266,000	3,000	.....	Dec.	EMD
Soo Line	4	C-C	Gen. Pur.	367,000	3,000	Dec.	Mar.	EMD
Southern	5	C-C	Rd. Sw.	410,000	3,300	June	1970	General Electric
	15	B-B	Gen. Pur.	244,000	2,000	Apr.	Sept.	EMD
	10	B-B	Gen. Pur.	244,000	2,000	Apr.	Oct.	EMD
	12	B-B	Gen. Pur.	244,000	2,000	Apr.	Sept.	EMD
	8	B-B	Sw.	256,000	1,500	Apr.	Nov.-Dec.	EMD
	5	C-C	Gen. Pur.	410,000	3,300	May	1st Qtr. '70	General Electric Co.
	70	B-B	Gen. Pur.	244,000	2,000	May	Oct. '69-Mar. '70	EMD
	15	C-C	Gen. Pur.	410,000	3,600	May	Mar. '70	EMD
	10	B-B	Sw.	256,000	1,500	May	Mar.-Apr. '70	EMD
Southern Pacific	15	C-C	Rd. Sw.	416,000	3,300	Jan.	May	General Electric
	43	C-C	Rd. Sw.	416,000	3,300	Apr.	1970	General Electric
	7	C-C	Rd. Sw.	416,000	3,000	Apr.	Oct.	General Electric
	126	C-C	Rd. Sw.	400,000	3,600	.....	Jan.	EMD
Spokane, Portland & Seattle	6	B-B	Gne. Pur.	250,000	2,300	Oct.	Feb. '70	EMD
State of New Jersey	6	C-C	Pass.	392,000	3,300	Aug.	1970	General Electric
Terminal R. R. Assoc. of St. Louis	6	B-B	Sw.	250,000	1,500	.....	Nov.	EMD
Toledo, Peoria & Western	2	....	Sw.	257,500	1,500	Aug.	Apr. '70	EMD
	1	....	Rd. Sw.	273,300	3,000	July	Oct.	EMD
Union Pacific	22	....	Frt.	.....	6,600	Apr.	June-Dec. '70	EMD
	20	....	Frt.	.....	5,000	Apr.	Aug.-Dec. '70	General Electric
Various Industrial Orders	22	....	.....	.....	.....	.....	1969	EMD
Western Maryland	5	B-B	Sw.	410,000	3,000	Dec. '68	June '69	EMD

(CONTINUED ON PAGE 75)

Completely Interchangeable!

Universal®



DOUBLE-ACTING AUTOMATIC SLACK ADJUSTER

MODEL 1900-DJ

A.A.R. APPROVED CERTIFICATE NO. 8A
FOR ALL TYPES OF RAILROAD CARS

PATENTED

- **Only *one* rotating internal part, sealed from foreign particles. Special oil prevents rust and wear, assuring long service life.**
- **Special cold rolled threads add strength, minimize friction. Standard connection threads at rod end rolled for maximum strength.**
- **Heavy wall construction for greater durability.**
- **Maintains required piston travel at all times.**

The UNIVERSAL Double-Acting Automatic Slack Adjuster Model 1900-DJ has been carefully researched, engineered and tested for maximum reliability. Quality parts assure strength, durability and efficient performance. For additional fine features, cutaway and assembly drawings, write or phone today for brochure.
Specify UNIVERSAL 1900-DJ!

UNIVERSAL RAILWAY DEVICES COMPANY

332 SOUTH MICHIGAN AVENUE • CHICAGO, ILLINOIS 60604 • TELEPHONE: 312-427-5051

CANADIAN CARDWELL COMPANY LTD., 1875-46TH AVE., LACHINE 620, QUEBEC • TELEPHONE: 514-636-4864

1969 LOCOMOTIVE ORDERS—CANADIAN DOMESTIC

Purchaser	No.	Wheel Arrangement	Service	Weight Lb.	Horsepower	Order Date	Delivery Date	Builder
Canadian National	20	C-C	Rd. Sw.	.....	3,600	June	May-Aug. '70	MLW-Worthington
	50	..	Rd. Sw.	387,000	3,000	July	1970	Diesel Div., General Motors of Canada
Canadian Pacific	29	C-C	Frt.	390,000	3,000	Feb.-June	Oct. '69-Mar. '70	MLW-Worthington
	44	C-C	Frt.	390,000	3,600	Feb.-Sept.	Nov. '69-July '70	MLW-Worthington
	1	C-C	Frt.	390,000	4,000	Feb.	July '70	MLW-Worthington
	6	B-B	Gen. Pur.	260,000	2,000	Nov.	May '70	General Motors of Canada, Diesel Div.
	21	C-C	Frt.	392,000	3,000	Feb.	Sept. '69-Jan. '70	MLW-Worthington

1969 LOCOMOTIVE ORDERS—FOREIGN

Purchaser	No.	Wheel Arrangement	Service	Weight Lb.	Horse-Power	Order Date	Deliver Date	Builder
Brazil	40	B-B	Frt.	110,000	950	Sept.	1970	General Electric
Chile-Bethlehem Chile Iron	2	C-C	Gen. Pur.	196,000	1,310	Jan.	Oct.	General Motors Overseas
Chile-Cemento Cerro Blanco de Palpaico	1	B-B	Sw.	90,000	260	Nov.	1970	General Electric
Guinea-OFAB	3	B-B	Gen. Pur.	62,000	1,500	June	Mar. '70	General Motors Overseas
Honduras-United Fruit	1	B-B	Frt.	110,000	950	May	1970	General Electric
Italy-Italsider	8	B-B	Sw.	200,000	600	Feb.	Sept.-Oct.	General Electric
	1	B-B	Sw.	130,000	520	Feb.	July	General Electric
Mexico	4	B-B	Gen. Pur.	368,000	3,000	July	Apr. '70	General Motors Overseas
Mexico-Fundidora	1	B-B	Sw.	90,000	260	June	1970	General Electric
Mexico-Ferrocarril del Pacifico	4	C-C	Frt.	360,000	3,000	July	Dec.	General Electric
Pakistan Western	23	C-C	Frt.	177,000	1,550	Aug.	1970	General Electric
	42	C-C	Frt.	197,000	2,000	Aug.	1970	General Electric
Panama-United Fruit	4	B-B	Frt.	64,000	336	Mar.	1970	General Electric
	1	B-B	Frt.	104,000	640	May	1970	General Electric
Sierra Leone Development Corp.	3	C-C	Gen Pur.	215,000	2,000	Oct.-Dec.	Apr. '70	MLW-Worthington
Taiwan-TRA	5	B-B	Gen. Pur.	114,000	1,000	Mar.	Nov.	General Motors Overseas
	39	B-B	Gen. Pur.	174,000	1,500	Mar.	Nov.	General Motors Overseas
Yugoslavia	35	C-C	Gen. Pur.	217,000	2,000	Nov.	July '70	Diesel Div., General Motors of Canada

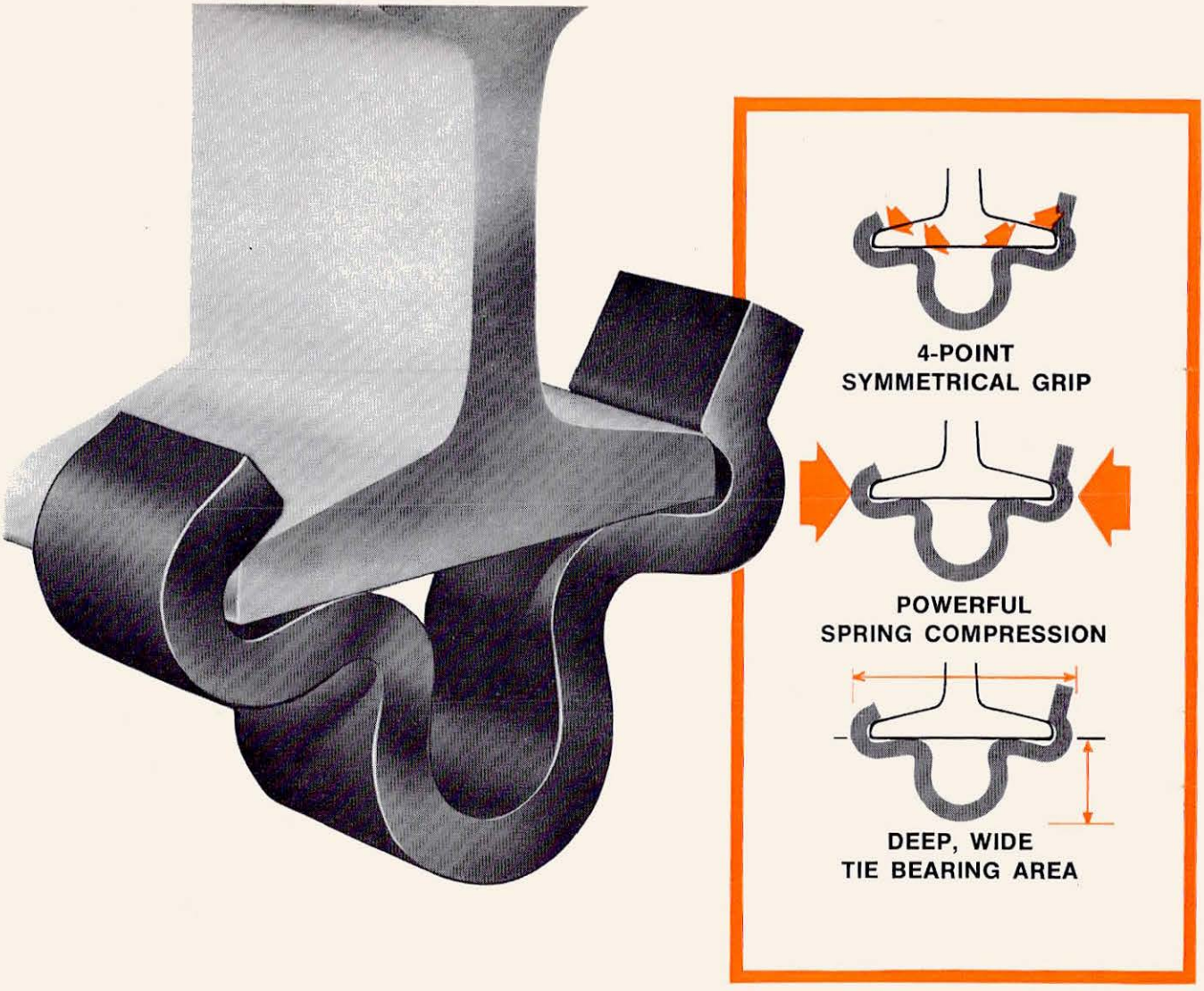
1969 PASSENGER-CAR ORDERS

Purchaser	No.	Type	Length Ft. In.	Construction	Seating Capacity	Weight	Order Date	Delivery Date	Builder
Chicago & North Western	8	Gallery Double Deck	85 ..	Alloy Steel	161	126,000	Feb.	Dec.	Pullman-Standard
	5	Gallery Double Deck	85 ..	Alloy Steel	161	126,000	Feb.	Oct. '70	Pullman-Standard
Chicago, Rock Island & Pacific	5	Bi-Level Coach	85 ..	All Steel	161	123,000	Mar.	Dec. '69-Jan. '70	Pullman-Standard
	5	Bi-Level Coach Cab Control	85 ..	All Steel	155	127,000	Mar.	Dec. '69-Jan. '70	Pullman-Standard
Chicago South Suburban Mass Transit District (Illinois Central)	123	Double Deck Rapid Transit	85 ..	All Steel	158	130,000	Oct. '69	1971-73	St. Louis Car
Cleveland Transit System	10	Rapid Transit	70 ..	All Steel	80	64,100	Aug.	Mar.-Apr. '70	Pullman-Standard
New Jersey Department of Transportation (Erie-Lackawanna)	10	Suburban Bar Cars	85 ..	All Steel	117	75,876	Aug.	July-Aug. '70	Pullman-Standard
	71	Suburban Trailer Cars	85 ..	All Steel	131	73,508	Aug.	Aug. '70-Mar. '71	Pullman-Standard
	24	Suburban Cab Cars	85 ..	All Steel	127	76,508	Aug.	May-July '70	Pullman-Standard
New York City Transit Authority	240	Rapid Transit	75	All Steel	72-76	81,000	Dec.	1971-1972	St. Louis Car
San Francisco Bay Area Rapid Transit	250	Coach Rapid Transit	70-75 ..	Aluminum	72	56,000	July	Aug. '71-June '72	Rohr Corp.

RAILROAD COMMUNICATIONS INSTALLED IN 1969

Railroad	Radio Units	Intercommunications		Channelizing Equipment		Telephone		Computer I/O unit	Teletype-writers	Microwave Stations
		No. of Systems	Loudspeakers & Telephones	Carrier Units Terms. & Rep.	Data Moderns	Exchanges	Stations Available			
Alaska	9	..	..	..	..	..	..	..	4	..
A&WP	7	..	..	2	..	..	..	..	..	..

(CONTINUED ON PAGE 77)



UNEXCELLED

FOR HOLDING POWER AND ECONOMY

WOODINGS

ADVANCED-TYPE RAIL ANCHOR

WOODINGS-VERONA TOOL WORKS

VERONA, PA. 15147

MEMBER RPI RAILWAY PROGRESS INSTITUTE

Circle 23 on coupon page 90

RAILROAD COMMUNICATIONS INSTALLED IN 1969 (cont.)

Railroad	Radio Units	Intercommunications		Channelizing Equipment		Telephone		Computer I/O unit	Teletype-writers	Microwave Stations
		No. of Systems	Loudspeakers & Telephones	Carrier Units Terms. & Rep.	Data Moderns	Exchanges	Stations Available			
Georgia	9	..	..	..	..	..	..	..	..	..
WHyA	7	..	..	2	..	..	..	..	..	..
A&StAB	5	1	..	..	..	..	..	..	..	..
BRy C	4	..	..	..	..	..	..	..	..	..
B&LE	15	..	..	..	..	..	..	..	..	..
Burlington	102	4	77	42	30	..	30	50	25	..
CN	205	3	141	1,102	75	7	1,400	..	2,211	7
CP	1,908	1	154	2,372	69	7	339	37	2,803	4
C&O/B&O	271	3	87	36	20	7	150	10	50	..
C&NW	40	2	34	86	12	2	120	..	..	7
CTA	2	4	99	..	..	..	..	..	..	..
Cleveland TS	85	..	..	..	..	..	..	..	..	..
DH	87	..	..	..	..	..	..	..	..	..
DT&I	9	1	6	2	..	..	..	..	..	..
DM&IR	20	..	..	..	..	..	20	..	..	..
EJ&E	31	2	..	2	58	..	..	40	..	..
Frisco	44	2	10	..	..	..	..	30	2	..
GN	172	3	81	33	..	..	..	..	..	..
GBW	6	..	..	..	..	..	..	..	..	..
GM&O	42	..	..	8	..	..	..	..	..	..
IC	247	2	23	300	200	2	550	85	..	34
KCT	16	3	..	..	..	..	..	..	1	..
K&IT	5	..	..	..	..	..	..	..	..	..
L&HR	5	..	..	..	..	..	..	..	..	..
LV	14	1	12	..	1	..	5	..	..	..
L&N	143	7	24	50	6	3	64	..	..	8
MBTA	173	4	80	..	..	..	..	..	..	..
MTA-LI	172	4	41	..	..	..	..	..	..	..
Milwaukee Road	41	..	..	4	..	..	4	..	20	..
M-K-T	34	..	..	..	..	..	..	..	..	..
MP	44	..	..	..	2	..	..	6	..	2
C&EI	1	..	..	..	..	..	..	..	..	..
T&P	34	..	..	..	..	..	..	1	..	..
Monon	38	..	..	..	..	..	..	..	..	..
Montreal, Cde T	10	5	488	..	..	..	..	..	..	..
N&W	226	1	79	34	18	..	..	..	6	..
NP	101	1	50	45	74	6	275	36	7	51
PGE	37	1	5	12	2	..	..	..	3	2
PC	370	7	118	..	97	1	60	..	..	..
Reading	18	..	..	..	..	..	..	..	..	..
RF&P	18	..	..	..	..	..	..	..	..	..
Rock Island	113	4	..	37	..	5	155	..	..	..
Santa Fe	254	..	..	..	..	3	..	..	..	..
SCL	376	1	148	49	..	1	25	..	..	..
SOO Line	46	1	10	11	2	1	60	..	..	..
Southern	133	5	30	64	43	3	135	33	33	..
SP	223	..	18	310	300	1	350	190	3	38
SP&S	36	..	..	..	..	..	..	..	..	..
TP&W	2	..	..	..	..	..	..	..	..	..
UP	189	..	3	132	50	4	220	40	8	24
WM	52	..	..	..	..	..	..	..	..	..
WP	30	2	40	56	..	..	..	..	..	6
SN	4	..	..	..	..	..	..	..	..	2
Totals	6,301	75	1,859	4,791	1,059	47	3,962	558	5,176	188

RAILROAD SIGNALING INSTALLED IN 1969

Railroad	Highway Grade Crossings Protected by		Block Signals & Traffic Control					Detectors	Miscellaneous Signal Units
	Flashing-light signals	Flashing-light signals & gates	Road Miles	Switches	Electric Locks	Signals	Train Stops Cab Signals		
Alaska	5	..	..	..	..	..	..	..	..
A & StAB	1	..	..	..	..	..	..	..	..
A & WP	..	1	..	..	..	..	..	..	..
Georgia	..	1	..	..	..	..	..	..	5
WRy A	..	..	..	..	..	69	..	..	4
BAR	2	..	..	..	..	..	..	..	..
B&LE	4	..	..	..	..	..	..	..	15
B&M	5	..	9	..	5	5	..	..	17
Burlington	48	8	..	1	..	2	..	3	60
CN	169	25	58	26	21	78	..	96	149
CP Rail	96	10	28	6	2	29	..	1	90
C&O/B&O	45	18	22	6	12	28	..	5	..
C&NW	50	9	..	..	..	..	..	6	19
CWI	..	1	..	..	..	..	..	..	6
CTA	..	..	13	..	..	..	70 CS	..	178
Cleveland TS	..	..	..	..	..	..	..	..	8
D&H	6	..	..	..	..	..	..	2	14
DT&I	2	3	16	4	3	4	..	..	22
DM&IR	..	..	8	2	..	7	..	..	5
EJ&E	1	2	5	..	..	2	..	..	..
EL	4	10	..	..	..	..	..	..	29
FEC	6	12	4	1	13	2	..	20	..
Frisco	19	1	..	..	10	..	..	24	4
GN	12	8	51	13	11	79	..	13	5
GB&W	4	..	..	..	..	..	..	..	..
GM&O	7	1	11	1	4	9	..	6	10
IC	30	12	69	13	18	82	..	24	21
KCT	..	..	..	..	..	..	..	..	27
L&HR	1	..	..	..	..	..	..	..	..
LV	7	1	19	1	7	17	..	..	36
L&N	20	5	..	..	..	..	..	4	14
MEC	5	..	..	..	..	..	..	..	..

(CONTINUED ON PAGE 81)

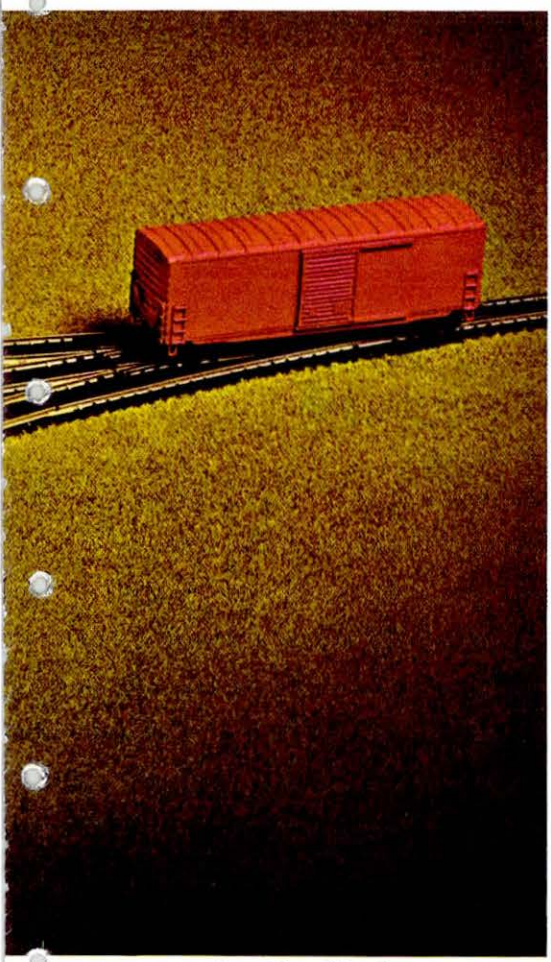
Illustrated above in blue: Pullman-Standard Foam Insulated Car; purple: PS 86′ Hy-Cube; orange: PS 60′ Auto Parts Car; green: PS Mini-Hycube; yellow: PS WAFFLE SIDE™ Box Car.
WAFFLE SIDE is a Trademark of Pullman-Standard, a division of Pullman Incorporated.

RPI
RAILWAY PROGRESS INSTITUTE

You can't do much to a box car.

Except lengthen it, raise it, insulate it, cushion it, or give it waffle sides.

What you do to a box car determines what a box car can do.



Above: PS-1 40′ Box Car.

Since building the first standard box car, we've become the best choice for specialized box cars. Like Hy-Cubes, Mini-Hycubes, auto parts cars, foam-insulated box cars and cars with long travel cushioning.

And now we've got a model with "waffle" sides.

Single sheath car sides can be embossed with a "waffle" pattern, so that cross bar belt rails are recessed. This results in flush interiors, designed to protect lading from snagging and damage, while providing utmost efficiency in securing it.

When it comes to doing things with box cars, Pullman-Standard still does them best.

Pullman-Standard
WORLD'S LARGEST RAIL CAR MAKER
200 South Michigan Avenue, Chicago, Illinois 60604

A Division of **Pullman Incorporated**

It has never been so urgent to train and upgrade employes —or so easy!

. . . Or so inexpensive!

Home-study courses, tailored to the different needs of the maintenance-of-equipment department, can develop skilled journeymen from your present force of unskilled labor. It can cost as little as $6 per month per trainee. The Railway Educational Bureau provides the courses, and does the grading.

Many railroads use it!

The Bureau already has formal arrangements with 17 Class I railroads, one industrial railroad, a mining railroad, and a private car company. Successful completion of four-year courses qualifies apprentices as journeymen. Some roads use accelerated programs, turning out skilled machinists, electricians, carmen, car inspectors and other craftsmen in as little as three years. In the case of especially responsive students, two years is sufficient for the regular four-year course. But short of full apprenticeship programs, many other railroads use shorter REB courses for upgrading and refreshing.

Railroads and trainees get feedback.

Instructors of the Railway Educational Bureau, all active railroad men themselves, grade students' examination papers and make individual comments and suggestions to the students when such help is needed. In the case of formal, company-sponsored programs, the railroad gets a monthly report of each students' progress.

Who qualifies?

Any railroadman. Courses are written for employees with a high school level of education.

How to participate.

Besides formal apprentice training programs on a contract basis, railroads may help an employee by paying half his monthly tuition, or all of it, or by reimbursing the employee on successful completion of his training. Or, like several railroads, they may authorize payroll deductions.

For more information.

Write now, or phone collect, to Joe S. Betz, Director, Railway Educational Bureau, 1809 Capitol Ave., Omaha, Nebr., 68102, telephone (402) 341-7889, or Harry L. Waddell, Simmons-Boardman Publishing Corp., 30 Church St., New York, N.Y. 10007, telephone (212) 964-3060.

Railway Educational Bureau

RAILROAD SIGNALING INSTALLED IN 1969 (Continued from page 77)

Railroad	Highway Grade Crossings Protected by		Block Signals & Traffic Control					Detectors	Miscellaneous Signal Units
	Flashing-light signals	Flashing-light signals & gates	Road Miles	Switches	Electric Locks	Signals	Train Stops Cab Signals		
MTA-LI	..	..	..	..	3	..	..	..	..
NYCTA	..	..	4	..	..	30	78 ts	..	135
Milwaukee Road	25	4	..	..	..	..	..	..	12
M-K-T	11	1	..	..	..	..	..	31	..
MP	22	3	..	..	..	..	..	..	8
C&EI	..	..	..	..	..	..	..	..	29
T&P	7	1	..	..	..	..	..	..	6
Monon	3	..	..	..	..	..	..	..	6
Montreal, Cde T	1	1	15	..	..	..	..	..	1
N&W	17	13	47	17	11	54	..	81	61
NP	9	4	179	..	..	143	..	..	181
NS	4	..	..	..	..	..	..	..	..
PGE	8	..	..	..	..	..	..	..	..
PC	70	47	217	45	10	124	4 CS	98	166
PATH	..	..	2	..	..	12	12 ts	..	..
Reading	2	..	1	..	1	2	..	..	5
Rock Island	26	11	..	..	1	..	..	..	10
Santa Fe	50	70	29	..	..	..	..	5	2
SCL	26	16	..	8	14	43	..	24	14
SOO Line	20	..	60	10	8	45	..	..	..
Southern	20	10	7	6	35	15	..	3	56
SP	17	160	..	..	..	..	..	4	13
SP&S	..	..	..	..	..	..	..	..	1
TRAStL	..	1	..	..	..	..	..	..	..
TP&W	2	..	..	..	..	..	..	..	..
UP	16	9	..	..	..	..	27 CS	9	45
WM	2	..	..	..	..	..	..	3	..
WP	5	17	..	..	..	..	..	2	2
TS	2	..	..	..	..	..	..	..	..
Totals	914	507	884	160	189	881	191	464	1,491

Note: Detectors include broken and loose wheels, dragging equipment, high-wide load clearance) and hotbox detectors. CS = cab signal units; ts = wayside units of train stops. Miscellaneous signal units includes interlockings with signals, switches, electric locks; yard signaling including power switches, retarders, engines with cab signals; spring switches, switch lamps, switch heaters, and other units of signal equipment.

Fixed property improvements

Of the total amount invested in 1969 by Class I roads in Canada and the United States for fixed properties, 36% was allocated to new and improved yards, according to reports submitted to *Railway Age*. No other category came close to meeting this percentage. In second place was grade separations with 20% and, tied for third place, were the new tracks and line-change categories.

Some railroads reported that their plans for fixed-property improvements for the year 1970 were not complete. But, of those that did report on this year's proposed expenditures, the Long Island stands out with two large projects. One includes the provision of $58.3 million for the elimination of 21 grade crossings, to be financed by New York State Department of Transportation, and the other is the provision of $30 million for 38 additional substations in existing electrified territory, which is to be financed by the Metropolitan Transit Authority, plus federal and state funds.

Again, in 1970, the category of new and improved yards will get preferred attention with 22% of the total funds allocated for fixed properties, followed by 11% for new tracks.

Following are brief descriptions of most improvement projects authorized for 1970, which are estimated to cost $100,000 or more.

Authorized for 1970

Boston & Maine: Move and relocate facilities in connection with extension of rapid transit and construction of Interstate Highway Route 695 between Boston, Mass., and Somerville, $3,000,000; and install crane facility for piggyback at Boston, $120,000.

Central of New Jersey: Rearrange and restore tracks in Claremont coal yard, Jersey City, N.J., $204,900; and reconstruct fender system, East channel, Bridge 7/61 over Newark Bay, $315,000.

Chesapeake & Ohio/Baltimore & Ohio: Construct four additional tracks to expand the yard at Livonia, Mich., $242,000; rearrange tracks in yard, Saginaw, Mich., $1,024,000; construct one mile of supply and support trackage to serve Environ, Inc., at Romulus, Mich., $135,000; make track and signal changes to permit simultaneous movements through Cincinnati Jct. at Cincinnati, Ohio, $638,000; construct industrial tracks at Deacon, Va., to serve Lynchburg Foundry Co., $220,000; construct team tracks and trailer facilities at Richmond, Va., $159,000; change creek and extend tracks at Republic, W.Va., to serve Carbon Fuel Co., $136,000; construct three-story division office building and convert existing office building into a passenger station at Cumberland, Md., $721,000; construct a support yard and an agency building to serve local industries at Lordstown, Ohio; construct a 40-bedroom resthouse addition to Y.M.C.A. facilities at Willard, Ohio, $179,000; and construct support trackage to serve Island Creek Coal Co. at Kohlsaat, W.Va.

Chicago & Eastern Illinois: Extend siding at St. Peter, Ill.; and construct track scale and weighbridge for 600,000-lb capacity at Yard Center, Ill.

Chicago, Burlington & Quincy: Construct steel bridge, 170 feet long, at M.P. 65.33 near Sheridan, Ill., $164,000; construct steel lift-span to provide 300-foot-wide clearance at Beardstown, Ill., $3,922,300; construct open-deck beam span bridge at M.P. 527.37 near Denver, Colo., $129,000; construct six-car storage tracks and other facilities at Havelock, Nebr., $310,100; construct siding east of Grand Island, Nebr., $127,400; install remote control signaling at Carling tower near Lincoln, Nebr., $165,900; install gas-fired steam boilers and one air compressor in shop power plant at Aurora, Ill., $190,300; and construct steel insulated building for locomotive testing at diesel shop at Lincoln, $19,700.

Clinchfield: Extend passing tracks in Virginia, $1,000,000.

Chicago, Milwaukee, St. Paul & Pacific: Expand present TOFC and COFC

(Continued on page 84)

100
100
GM
GM
100

Iron Horse, today

The era of the huffing, puffing Iron Horse of old came to an end just over 30 years ago with the introduction of the nation's first Diesel freight locomotive.

This General Motors locomotive—the one that proved that the new kind of motive power could do twice the work of steam at half the cost—started an avalanche of savings, new efficiencies and conveniences for railroad operation. These benefits have been expanded and multiplied in today's second generation of Diesel motive power.

What's our Iron Horse like today? She's put together with space-age metals and controls. On the outside she looks very much like her ancestors but inside she can do the work of any three of them. Almost without exception, the design parameters of her components have been kept the same as the earliest models. This has protected the railroads' equity in older models and provides maximum economy in locomotive replacement.

Our Iron Horse is a thoroughbred all the way. She runs at the head end of railroading's newest advances in containerization, piggybacking and jumbo rolling stock. She can be programmed, automated and radio controlled.

America's railroads can bet on our Iron Horse today and in the years ahead. All she needs is a fast track and a green light.

GM
MARK OF EXCELLENCE

Electro-Motive Division
La Grange, Illinois

Circle 37 on coupon page 90

(Continued from page 81)

facility to increase storage and loading capacity at Bensenville, Ill., $200,000; and expand present TOFC and COFC facility at Seattle, Wash., to increase storage and loading capability, $300,000.

Detroit, Toledo & Ironton: Install new connection between DT&I and PC to improve interchange facility at Quincy, Ohio, $135,000; and install electronic weigh-in-motion scale on hump of yard at Flat Rock, Mich., $110,000.

Great Northern: Construct two-mile siding in connection with CTC at New Irby, Wash., $133,000; extend siding at Bellingham and New Westminster, B.C., $246,000; renew 39 spans and five pile piers of Bridge 186.2 near Sioux Center, Iowa, $111,000; replace light-design steel girder spans at Bridge 1728.2 at Skykomish, Wash., $120,000; improve clearances and drainage in Tunnels No. 18, 19, 20 and 21 near Bellingham, Wash., $175,000; move passenger and freight car air-brake cleaning shop at St. Paul, Minn., $108,000; remodel building to house Transportation Control Center at Minot, N.D., $100,000; construct car-repair facility at Great Falls, Mont., $260,000; construct diesel service facility at Interbay, Wash., $995,000; replace power plant with automatic boilers and air compressors at Havre, Mont., $147,000; install air-conditioning equipment in general office at St. Paul, Minn., $600,000; replace master retarder at Gavin Yard in Minot, $116,000; install hot-journal detectors between New Rockford and Williston, N.D., $120,000; install hot-journal detectors between Bainville and Shelby, Mont., $200,000; install CTC from Ephrata, Wash., to Lamona, $610,000; install CTC between Marysville and South Bellingham, Wash., $960,000; install CTC control machine, communication circuits and associated equipment for Transportation Control Center at Minot, $450,000; and replace manually operated tower with remote controlled tower at Soo Line crossing near Minot, $200,000.

Louisville & Nashville: Install 380-car yard to serve industry at Skillman, Ky., $500,000; construct by-pass track around business district at Evansville, Ind., $3,000,000; replace bridge over multiple tracks at Atlanta, Ga., $270,000; and construct facility to remove objectionable materials before turning discharge into streams at Nashville, Tenn., $300,000.

Missouri Pacific: Replace 281 feet of pile trestle at Bridge 4076, near Witherspoon, Ark., with 598 feet of reinforced-concrete trestle; replace 780 feet of pile trestle at Bridge 2628 near Newport, Ark., with 770 feet of reinforced-concrete trestle; replace 515 feet of pile trestle at Bridge 131.1 near Spring, Tex., with 514 feet of reinforced-concrete trestle; replace part of east approach trestle bridge 20.4 near Highlands, Tex., with 698 feet of reinforced-concrete trestle; replace 990 feet of pile trestle at Bridge 243.2 near Lolita, Tex., with 998 feet of reinforced-concrete trestle; retire various tracks and construct a new yard about seven miles south of New Braunfels, Tex.; upgrade communication wire lines for Phase 2 of three-phase project for immplementation of Management Information Data System; and install related equipment; construct office and freighthouuse and retire old freight station at Freeport, Tex.; construct Phase 2 of two-phase project to consolidate TOFC and freight facilities at Memphis, Tenn.; and install steam generators, air compressors and ac-dc rectifiers to replace old steam powerhouse at North Little Rock, Ark.

Northern Pacific: Construct channel change near Medora, N.D., $190,000; replace present double-track pile trestle with two 20-foot span openings and fill approaches near Steilacoom, Wash., $250,000; construct freight terminal and classification yard at Northtown, Minn., $$2,300,000; construct two additional yard tracks at Yardley, Wash., $115,900; make track changes required in West Marginal Way because of street widening at Seattle, Wash., $392,300; construct track on graded line change at Colgate, Mont., $223,700; replace present electro-mechanical niterlocking with all-relay electric interlocking at Superior, Mont., $119,500; replace semaphore signals with searchlight type from Berea and Jamestown, N.D., and install charging line, $270,000; upgrade yard at Pasco, Wash., $2,526,000; finish installing 24 hot-box detectors on system, $345,000; install paging intercom system at Laurel, Mont., $182,000; install air-conditioning in general office building at St. Paul, $1,063,000; modernize two tracks at car-cleaning facilities at Pasco, $196,000; consolidate Brainerd and Paradise tie plants into one mechanized plant at Paradise, Mont., $111,140; construct new freight warehouse at South Seattle, Wash., $100,000; install electronic weigh-in-motion scale at Tacoma, Wash., $122,650; install one-spot freight-car repair facility at Parkwater, Wash., $130,000; and install one-spot car-repair facilities at Auburn, Wash., $179,700.

Penn Central: Install freight facilities for Chicago Shippers at Jersey City, N.J., $1,400,000; renew three-track two-span under-grade, (v.g.) bridge 1.81 at Philadelphia, Pa., $134,000; construct facilities for handling U.S. mail at Kearny, N.J., $278,000; replace turnouts in westbound and southbound classification yards at Gibson, Ind., $100,000; renew five-span approach of U.G. bridge 4.22 at Kearny, $201,000; reconstruct elevated bridge 2.65 north of Market Street in Philadelphia, $293,000; replace timber trestle with steel at U.G. bridge 134.35 in Washington, D.C., $211,000; replace timber structure with steel under two main tracks and four yard tracks at U.G. bridge 1.98 near Wilmington, Dela., $219,000; restore 60 feet of U.G. bridge 134.10 near Wooster, Ohio, $235,000; reinforce fender system at bridge 287.65 over Maumee river near Toledo, Ohio, $125,000; consolidate M/W shops at Canton, Ohio, $236,000; install pollution-abatement facilities at Penn Center Terminal in Buffalo, N.Y., $164,000; provide protection against pollution of the city sewer system at diesel terminal at Collinwood, Ohio, $157,000; construct waste-treatment facilities at Young Yard at Elkhart, Ind., $169,000; renew electric catenary, Chestnut Hill branch, Philadelphia, $218,000; construct new overhead bridge at New York Avenue in Rochester, N.Y., $153,000; construct new bridge at Washington Street in Steubenville, Ohio, $157,000; construct underpass to eliminate Court Street grade crossing at Charleston, W.Va., $201,000; reconstruct Halsted Street overhead bridge and remove Sangamon Street overhead bridge in Chicago, $194,000; provide terminal facilities to handle multi-level traffic from Ford Motor Co. at Westboro, Mass., $1,500,000; construct trackage and one-story yard-office building, complete with utilities, at Lockport, N.Y., $366,000; expand Sterling Yard at Warren, Mich., $689,000.

Southern: Fill or renew trestles and bridges at six locations, $1,052,000; work on container and other terminal facilities at five locations, $1,197,000; make track changes and additions at thirteen locations, $2,489,000; make interlocking and signal changes in connection with Birmingham Civic Center, $500,000; and make CTC and signal line modifications, $1,800,000.

Toledo, Peoria & Western: Upgrade timber structures on system, $200,000.

Union Pacific: Construct 12-story addition to headquarters office building at Omaha, Nebr., $6,500,000.

Western Pacific: Provide microwave communications and data transmission system between San Francisco, Calif., and Sacramento, $196,000; and expand TOFC/COFC facilities at Oakland, Calif., and Stockton to handle increased piggy-back traffic, $261,000.

Western Railway of Alabama: Reconstruct Tallawassee Creek bridge near Benton, Ala. $170,000. ■

You can now get a confirmed & guaranteed car reservation from National Car Rental in less than a minute.

From all those other guys all you can get is a very sincere promise.

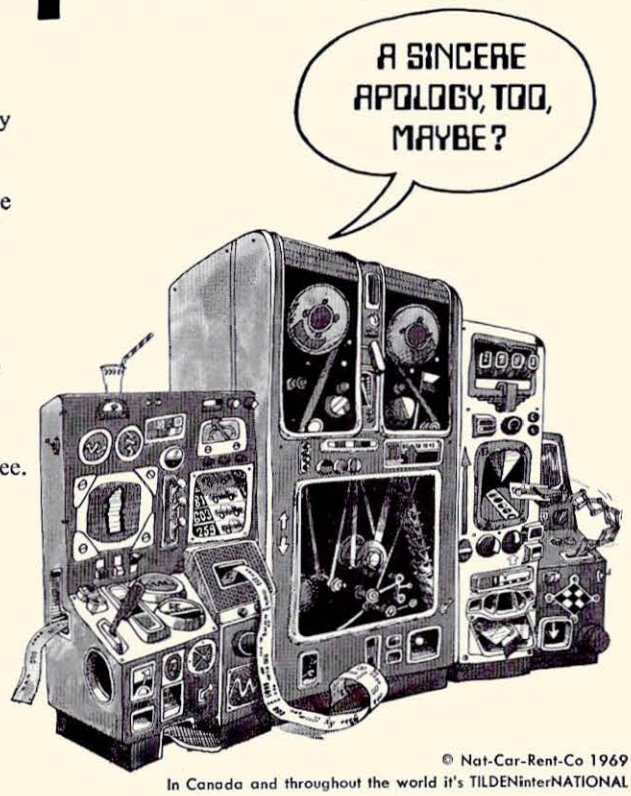
It's not that those other big city car outfits ever *mean* to leave you without wheels. It's just that at the moment they promise you a car they have no real way of knowing for sure that it will be there.

National does. Us country boys from Minnesota now have Max, the computer. You can call us for a reservation any time from anywhere in the U.S. toll-free by dialing 800-328-4567. Max knows, at the instant you call, what cars are available everywhere in the U.S. Before we guarantee your reservation, we talk to Max.

When you reserve a National Car at any of our locations, you also know you'll have your choice of a GM or other fine make, and that you'll get a fistful of free S&H Green Stamps.

It's your choice: a sincere promise or a National Guarantee. You can get either in about the same length of time.

We make the customer No. 1



© Nat-Car-Rent-Co 1969
In Canada and throughout the world it's TILDENinterNATIONAL

Donald L. Nelson
PC

Thomas H. Ramsey
Reading

Oscar P. Benjamin
Reading

John D. Grier
Reading

James I. Smith, Jr.,
Reading

J. Ted Wells
Rock Island

Donald J. Lippert
Rock Island

Robert L. King
SP

W. J. Lacy
SP

Thomas C. Buckley
SP

PEOPLE

ASSOCIATION OF AMERICAN RAILROADS—Max R. Sproles named head of AAR activities involving highways. He will be an assistant to **R. R. Manion,** vice president, operations and maintenance department. Mr. Sproles was state planning and research engineer, North Carolina State Highway Commission.

Joseph Wolflick has been named special representative, Freight Loss and Damage Prevention Section, Chicago.

PENN CENTRAL—Donald L Nelson, manager—field inspection and property protection, **Chicago & North Western,** Chicago, appointed director-security, PC, succeeding **Albert J. Tuohy,** retired.

READING.—Thomas H. Ramsey elected senior vice president—traffic, Philadelphia. **Oscar P. Benjamin,** assistant vice president—freight sales, succeeds Mr. Ramsey as vice president—traffic. **John D. Grier,** general manager—freight rates, named assistant vice president—sales. **James I. Smith, Jr.,** general manager—sales and service, TOFC, named assistant vice president—TOFC.

Paul J. LaPira, real estate agent, named assistant director of real estate, administration and special projects. **Donald J. Butler,** assistant real estate agent, succeeds Mr. LaPira as real estate agent. **Howard A. Smith,** office manager, Philadelphia, named assistant to real estate agent, Reading.

Philip R. Mueller, manager industrial engineering, Philadelphia, appointed assistant to vice president, operation and maintenance. **Frank G. MacKenzie,** industrial engineer accounting, named economic and cost research engineer.

ROCK ISLAND.—J. Ted Wells, marketing manager—grain and grain products, named manager of market development, Chicago. **Donald J. Lippert,** manager of marketing services, appointed manager of market research, Chicago.

SANTA FE. — Effective Jan. 1, **J. R. Fitzgerald** resumed duties as superintendent, Middle division, Newton, Kans., and **D. M. Miller** resumed duties as general transportation inspector, Eastern Lines, Topeka, Kans.

SOUTHERN PACIFIC.—Robert L. King, assistant general manager, San Francisco, promoted to general manager there, to succeed **Milton A. McIntyre,** advanced to assistant vice president-personnel (RA, Dec. 8, 1969, p. 38). Mr. King's successor is **W. J. Lacy,** superintendent, **St. Louis Southwestern,** Pine Bluff, Ark.

Thomas C. Buckley, assistant public relations manager, promoted to public relations manager, Los Angeles, succeeding **William G. Phelps,** transferred to San Francisco. **Daniel E. Lewis,** formerly on the public relations staff of Pacific Lighting Service Co., succeeds Mr. Buckley as assistant public relations manager, SP.

LETRO-LINE

LETRO-CRANE

PC-80
Capacity @33':
50,000#

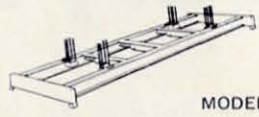
PC-120
Capacity @25':
100,000#

LETRO-PORTER

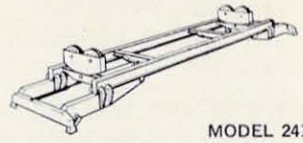
ELECTRIC DRIVE CONTAINER AND TRAILER HANDLER
Capacity: 60,000# to 90,000#

LETRO-GRIP

TOP AND BOTTOM PICK ATTACHMENTS



MODEL 220



MODEL 241

LeTro-Grip attachments are available in 7 models, from a 20' non-adjustable top pick to a top and bottom pick adjustable to handle containers (1-40' or 2-20') or trailers up to 26'.

THE LETRO-LINE
SUPERIOR PRODUCTS FROM
R. G. LETOURNEAU, INC.

Circle 27 on coupon page 90

The LeTro-porter gives you greater mobility for faster handling at lower cost.

Articulated steering for fast, accurate alignment, positive pile slope leveling control, and side shift are some of the features that make the LeTro-porter the fastest, most versatile container and trailer handler. The exclusive LeTro-matic drive and control system allows simultaneous operation of all functions without loss of power or speed, even in yards with minimum preparation. Full capacity loads are raised and lowered vertically with no tilting that might cause freight damage. As if these advantages weren't enough, only the LeTro-porter is rated to top pick a 67,500# 40' container or two 44,200# 20' containers. The LeTro-porter is available in capacities from 60,000# to 90,000#, in three different models, including a combination top and bottom pick. Write for a free brochure, specifications, and the name of your nearest distributor.

LeTro-matic drive and chassis components now available to OEM accounts.

R. G. LeTourneau, Inc.
P. O. Box 2307 Longview, Texas 75601 214-753-4411

This conditional sale agreement having been placed privately, this advertisement appears as a matter of record only.

NEW ISSUE

$5,651,250

St. Louis-San Francisco Railway Company

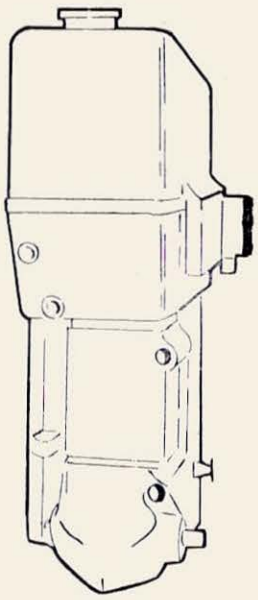
Conditional Sale Agreement

Due January 15, 1985

Dick & Merle-Smith

Members New York Stock Exchange
Continuing the Securities Business of Roosevelt & Son
Established 1797
48 Wall Street, New York, N. Y. 10005
Telephone: (212) 944-0440
ATLANTA • BOSTON • DALLAS • SAN FRANCISCO

Specialists in Fuel Injection and Governors



E.M.D. Alco

F.M.

G.E. Baldwin

UNIT EXCHANGE

Most type Railroad Governors, Fuel Pumps and Injectors. Saves time and money, with full warranty.

SARDELLO, INC.

MAIN SHOP: PITTSBURGH, PENNSYLVANIA
916 4th Ave., Coraopolis, Pa.
Phone 412-264-1300 412-264-0829

Circle 28 on coupon page 90

Robert E. Brill
Youngstown

Paul R. Peters
Youngstown

Robert A. Baer
Chemetron

Carl L. Henricks
Western-Cullen

SUPPLY TRADE

Robert E. Brill, vice president administration, **Youngstown Steel Door Co.,** Cleveland, has been elected executive vice president. **Paul R. Peters,** assistant to the vice president of manufacturing, has been named assistant vice president of manufacturing.

Robert A. Baer has been appointed president of the newly formed **Railway Products division** of **Chemetron Corp.** at 2 North Riverside Plaza, Chicago.

Carl L. Henricks has been named general sales manager of communications and signaling equipment, **Western-Cullen Division, Federal Sign & Signal Corp.,** Chicago.

M. Francis Spindle has been appointed sales engineer, Eastern District, Westinghouse Air Brake Division, **Westinghouse Air Brake Co.,** New York. Mr. Spindle was formerly assistant air brake engineer, **Penn Central.**

OBITUARY

Vincent P. Brown, 69, assistant vice president-pricing in the marketing department, **Great Northern,** died Jan. 5 in St. Paul.

Glen W. Hyett, 62, district manager of passenger sales, **Milwaukee,** Chicago, died Jan. 7.

Walter W. Robinson, 63, manager of industrial development, **Jersey Central, Lehigh & New England** and **New York & Long Branch** at Newark, N.J., died Jan. 2.

The outlook in Washington

(Continued from page 53)

also has a favorable report on a bill providing shippers, especially small ones, with the possibility of recovering legal fees in suits against carriers. Railroads were given some protection, too. The bill states that such recovery will be up to the discretion of the court, not that legal fees shall automatically be recovered in a successful suit.

As the Committee report says: "Thus a 'claims shark' situation, such as referred to by the witness for the rail roads, could be eliminated by the court in its discretion denying an attorney's fee to the plaintiff even if he prevailed. Further, the committee agrees with the position expressed by certain shippers that the term 'reasonable' in the language of the original bill could have permitted a court to decide in a particular case that *no* attorney's fee was justified to a prevailing plaintiff. This is not a new departure, and could safeguard against any possible 'claims sharks,' while at the same time permitting the shipper to ordinarily recover his reasonable attorney's fees."

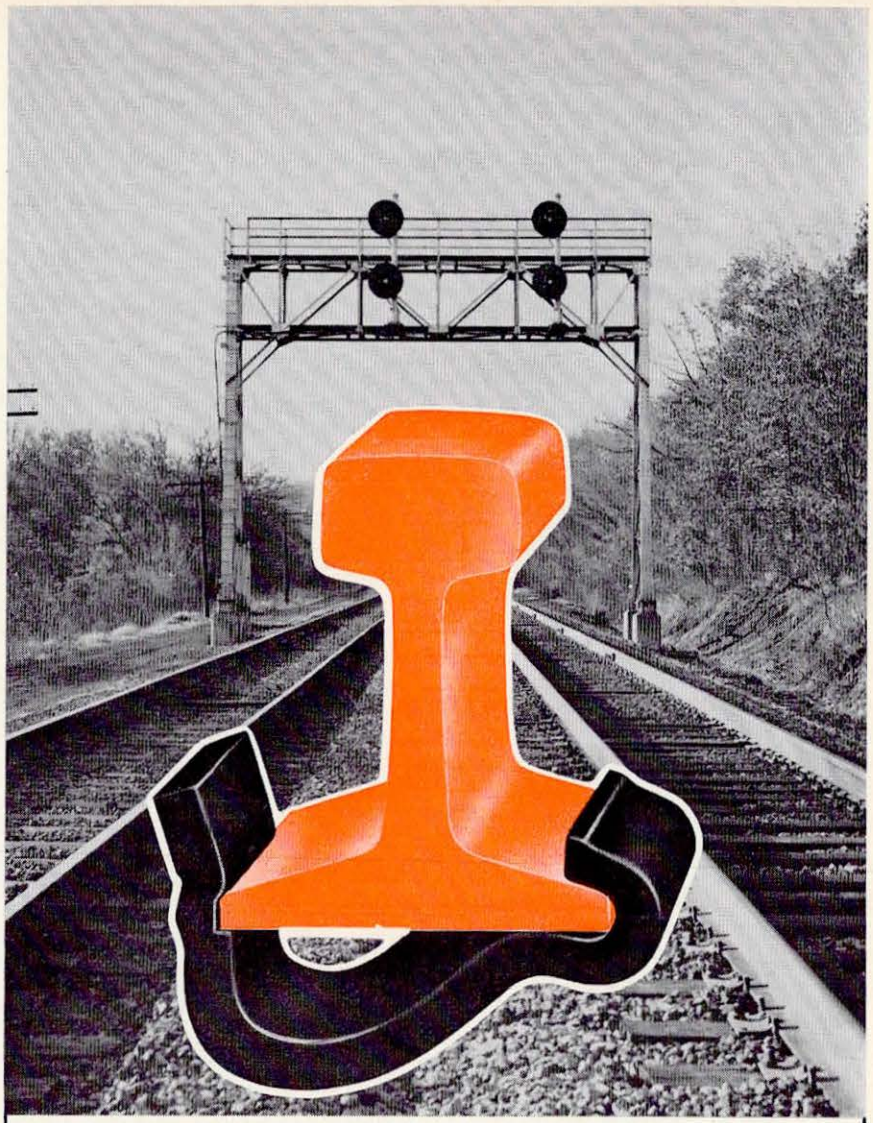
● **Car supply measures undecided.** More than any other issue, freight-car supply proposals have swamped the Hill in recent months.

Thus far, the railroads have escaped legislation that would tighten the federal grip on car supply. Throughout 1969, however, the Senate Commerce Committee and the Interstate Commerce Commission argued over the extent of ICC power to handle shortages under existing legislation. ICC said that in the first place, it did not have enough power and, in the second place, even if it did, it did not have an adequate statistical basis for setting such things as incentive per diem charges.

Just before Christmas, there was a sharp change in ICC thinking. First, the Senate committee attacked an ICC time-mileage plan approved in December by the Supreme Court (RA, Dec. 15, p. 12). Then the Commerce Committee sent another of its do-something-now ultimatums to ICC, and for once, ICC responded with a firm plan.

All of a sudden, ICC said it had acquired the data base it needed for an incentive per diem plan. And it proposed a plan that would call for extra car-rental charges of as much as $12.98 a day for the category of the newest and most expensive cars.

Railroads and other parties have until Feb. 24 to file statements in the case. Replies to those statements must be in by March 24. ■



YOUR RAILROAD HAS A FUTURE! DO YOUR RAIL ANCHORS?

They do, if they are rugged Unit Rail Anchors. High carbon, high manganese, spring steel, improved heat treating methods, and truly effective no-overdrive design give the Unit Rail Anchor the holding power it needs — for today's job and for repeated future use. You get maximum service — Unit Rail Anchors can be used over and over again without significant loss of holding power. Due to the UNIT'S design, it CANNOT be overdriven . . . assuring economy through REAPPLICATION, without costly re-forming. Initial investment is paid for many times over through high REAPPLICATION value. Unit Rail Anchors — the Future is designed into them.

ALSO AVAILABLE — UNIT II. Same high quality at a lower cost . . . Made from a slightly lighter section of steel, for requirements where the very high holding power and reserve strength of the Standard Unit are not considered essential.

Hubbard Super Steel and Super Service Alloy TRACK SPRING WASHERS . . . manufactured to meet all current A.R.E.A. specifications

Hubbard Carbon and Alloy Track Tools to meet current A.R.E.A. specifications and U.S. Department of Commerce Simplified Practice Recommendations.

MEMBER RPI RAILWAY PROGRESS INSTITUTE

UNIT RAIL ANCHOR COMPANY, INC.

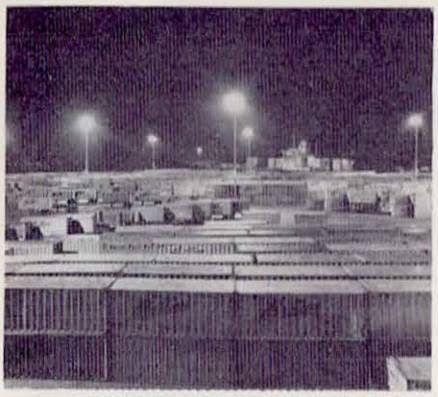
P.O. Box 4004
Pittsburgh, Pa. 15201
(412) 781-4800

Midwest Office: 322 S. Michigan Ave.
Chicago, Ill. 60604
(312) 427-7442

70RA1

Circle 29 on coupon page 90

NEW PRODUCTS REPORT

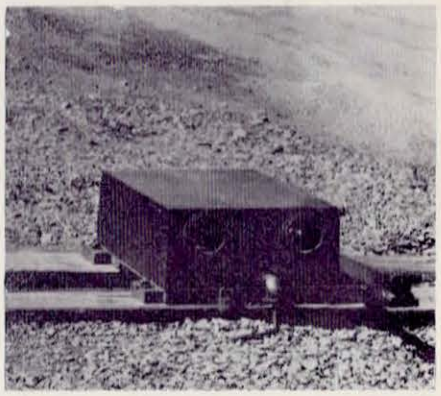


Terminal lighting (RA-1)

The Metalarc lamps giving high-level illumination at the Matson Lines' freight container terminal in the Port of Oakland, Calif., are said to assure easier reading of color-coded shipments and to have provided an initial savings of between 25 and 30%. The lamps, which have an average life rating of 7,500 hr and deliver 90,000 lumens, are mounted on eleven 100-ft poles, each pole housing from 22 to 28 lamps. *Sylvania Electric Products, Inc.*

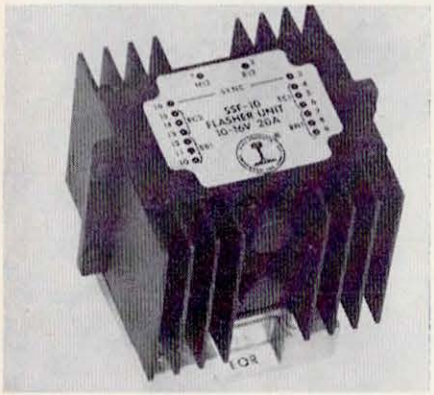
Hydraulic lift (RA-2)

An 8- x 3-ft serrated grating platform surface, guarded by 42-in.-high rails, features an hydraulic-powered work platform capable of lifting 800 lb. Its triple-scissor design provides adjustable working levels from 6 ft 4 in. to a maximum height of 21 ft 4 in. The all-welded lifts are avaliable with a-c electric, battery, air-motor, or gasoline engine drives. Full-telescoping ladders provide access to work surface at any height. *Ballymore.*



Electric switch machine (RA-3)

Designed for noninterlocked service, as in receiving and departure yards and industrial yards, the Speed-Frater electric switch machine is power-operated from 115 or 230 volts—or can be hand operated. It is trailable, reversible in midstroke, and has internal contacts for indicating its position. Operating time of the Speed-Frater is well under one second. It has a maximum—and adjustable—throw of 5½ inches. *General Railway Signal Co.*



Solid-state flasher (RA-4)

A solid-state flasher is available for use in all grade crossing flashing-light installations. The SSF-10 is completely solid state, and uses silicon transistors for maximum thermal stability and resistance to line surges. A "shorting" type circuit can be installed with present field and case wiring. The flasher operates consistent with relay operations as provided by standard AAR circuits. The SSF-10 has a high current capacity of 20 amp (10 amp each signal). This design permits tandem and synchronous operations where the current needs exceed 20 amp. A tip lamp on a gate installation does not require an additional conductor.

The SSF-10 is a compact unit that plugs in. Socket screws hold the unit in place. Plug and socket are ruggedly built and accept #12 wire. Specifications are as follows: Voltage—8-16 volts DC (battery or half-wave rectified AC); Current—0-20 amp total; Temperature range—minus 40° to plus 160° F; Flashing rate—adjustable 40 to 55 per minute; Size—3¼ in. x 4 in. x 3¾ in.; Weight—1½ lb. *Railroad Accessories Corp.*

RAILWAY AGE
THE TRANSPORTATION WEEKLY

30 Church Street, N.Y., N.Y. 10007 READERS' SERVICE (Att. J. Lindstrom)

PLEASE SEND ADDITIONAL INFORMATION ABOUT PRODUCTS IN ADVERTISEMENTS NUMBERED: 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38

PLEASE SEND INFORMATION ABOUT PRODUCTS DESCRIBED ON PAGE 90 MARKED: RA-1 RA-2 RA-3 RA-4

NAME ..... TITLE .....

COMPANY .....

ADDRESS .....

CITY ..... STATE ..... ZIP .....

• Inquiries can be processed only if title and company are shown. 1/19/70

FRA sees 2 passenger train angles

The Federal government must approach the passenger-train problem from separate "today" and "tomorrow" angles, Reginald N. Whitman, FRA administrator, said last week. Rail rights-of-way between cities constitute a major asset in the nation's transport needs, present or future, and "steps should be taken to keep these transportation corridors available . . . even though present needs are judged only on an economic basis," Whitman said.

To meet the "today" situation, Whitman suggested that the Government support a "skelton network."

"This would be done," Whitman said, "with the understanding that the basic network be related to present day needs and patronage. The basic system would be periodically reviewed to further reduce amounts of public assistance, by gradual elimination of runs not considered essential, and to reduce those that are essential to the lowest possible cost."

To meet the "tomorrow" situation, Whitman suggested a two-part program of (1) initial Federal and industry "seed money" to get demonstration high-speed projects started, and (2) a longer-term program, based on the demonstrations, consisting of a cooperative project between Federal, state and local governments.

"These would allow the Federal government to furnish equipment and one-time assistance in upgrading track and stations where studies show passenger service is needed and has a chance of success," Whitman said. "Public bodies should be required to stand behind their requests to the extent that they will take care of any operating deficit."

"It is my opinion," Whitman added, "that, all things considered, the railroad industry, per se, is not in a position to continue large passenger losses without serious implications. At the best, money lost in passenger service should be spent where there is as much of a public need. . . For instance, a great deal of money must be spent by the industry in upgrading their track and structures. The continuous shortage of cars indicates an extreme need for the industry to supplement their level of ownership." Whitman spoke at the Railroad Management Institute under way in Wash. D.C. ■

FRANK MALONE

WATCHING WASHINGTON

DESPITE FORECASTS OF A SLOWDOWN in the nation's economy for 1970, rails will again spend a big dollar for physical improvement. This is the word from the Commerce Department and the Securities and Exchange Commission. These agencies surveyed U.S. business late in 1969. Their survey says rails plan a 6.9% increase in capital expenditures for 1970. Other modes, however, plan a 4.1% *de*crease. Rail increase for 1969 was 11.8%, compared with a 0.4% decrease for others. Translated into dollars, the 1970 rail outlay is an estimated $1.6 billion. For all rail competitors, it is an estimated $4.1 billion.

FORECASTS FOR RAIL CUSTOMERS show some big, some small, changes. The big source of rail shipments, the manufacturing industries, show an overall 6.4% increase in 1970 capital spending—compared with a 12.3% rise in 1969. Non-manufacturers, however, show a 12% rise, compared with a 1969 increase of 10.4%.

IRON AND STEEL, FOR EXAMPLE, may invest 3.8% more in 1970, compared with a 6.4% decrease in 1969, the survey says. Other durables show: non-ferrous metal, up 5.4%, but up 12.6% in 1969; electrical machinery, up 14.9%, up 12.7% in 1969; other machinery, up 16.2% up 16.5% in 1969; autos and parts, *down* 0.5%, up 23.4% in 1969; transport equipment, *down* 19.7% up 8.4% in 1969; stone, clay and glass, up 1.5%, but up 46.5% in 1969.

FOR NON-DURABLES MANUFACTURING, there's this lineup: food and beverages, up 1.8%, but up 15.2% in 1969; textiles, *down* 10.3%, up 18.1% in 1969; paper, up 1.9%, but up 22.7% in 1969; chemicals, up 13.7%, up 11.3% in 1969; petroleum, up 16.9%, up 7.7% in 1969; rubber, down 0.1%, up 9.1% in 1969, the survey says.

A BETTER PICTURE FOR NON-MANUFACTURERS is drawn by the Commerce-SEC findings. Although mining capital spending may be down 1.4% in 1970, compared with a 13.8% rise last year, other areas look good. Unfortunately, these are not the most suited for rail-haul. Public utilities, for example, show an estimated 14.9% increase, compared with a 13.3% increase in 1969. And, the big category of communications, commercial, finance and services may register a 14.9% spending rise, compared with a 10.8% increase for 1969. Included in this category is one rail-haul item that *won't* share the big spending—construction. This is expected to stay flat.

Car market: 70,000 in '70

(Continued from page 38)

Boston-based XTRA expects its trailer leasing with railroads to increase slowly but steadily through 1970. XTRA President Robert E. Keiran reports his railroad customers want primarily the "old workhorse," the 40-foot van trailer. There is now some demand for flatbeds, drop-frames and 20-foot and 40-foot container chassis. Dorsey, a typical trailer builder, expects its 1970 railroad sales volume to be up 15 to 20% over 1969. The leveling of piggyback loadings last year was seen by Dorsey as a regrouping which should be followed by greater utilization of piggyback service. Railroads still buy dry freight vans in greater volume than any other type from Dorsey.

The growth of trailer leasing by outside organizations (about 70% of the trailers in piggyback service are leased, rather than being owned, by railroads) has caused some observers to speculate as to whether the railroads may have missed a boat. An operation patterned after Trailer Train could have provided railroad-owned trailers for leasing within the industry. This opportunity has apparently now passed.

● **Car leasing.** Trailer Train, reports President C. D. Buford, has been able to continue to finance new cars in a tight money market because of the confidence it has engendered in the investment community. "Our debt," he adds, "has not been guaranteed by our member railroads since 1962, and we have consistently met all our obligations."

In the face of predictions for some cooling of the economy, Buford expects that authorizations for additions to the TTX fleet in 1970 would be below 1969, and down more substantially from the immediately preceding years. However, he adds, some 1969 authorizations for the TTX fleet will be carried over into 1970 so that additions to the fleet this year will be about the same as in 1969. Cars for piggyback and autorack service continue to predominate in demands on TTX but, says Buford, "we have been attempting to broaden the line of flatcar equipment which we offer."

Since 1964 TTX has offered 60-foot flatcars for various specialized services. The 89-foot container car has been available since 1968. In 1969 TTX began furnishing 68-foot, 90-ton bulkhead flatcars for lumber loading. TTX hopes to continue to develop flatcars for new uses "wherever there is an opportunity to better serve member roads." New designs are expected to increase market participation to a "small degree" this year and "increasingly in subsequent years."

Two refrigerator car operators—Fruit Growers Express and Pacific Fruit Express—are expanding their fleets. PFE—jointly owned by Southern Pacific and Union Pacific—has placed orders for 1200 more 70-ton multipurpose mechanical cars for delivery this summer. At that time the PFE mechanical fleet will total almost 11,800—about 71% of PFE's total car ownership and about 50% of the national mechanical reefer fleet. This growth accompanies a steady expansion in the number of refrigerated trailers owned by PFE, FGE and many individual railroads. Fruit Growers will shortly start building 1000 bunkerless insulated cars at a cost of $20 million.

North American Car, a lessor beset by the same problems of high money costs, uncertain taxation changes and inflationary trends which confront railroads, expects to maintain its growth pattern and increase its profitability this year. Robert B. Oppenheimer, NAC vice president and general manager, envisions great strides in railroading in this new decade and expects North American to participate fully in them.

He concedes that many new problems confront the specialized car industry. Presently the industry is preparing a research and testing program to determine how tank car safety can be even further improved. Oppenheimer notes that the Tank Car Committee of the Railway Progress Institute is cooperating with the AAR, the Department of Transportation and shippers groups in development which should have "far reaching positive effects on railroad safety."

North American sees a market for many new cars resulting from recent AAR regulations which forbid the use in interchange service of cars over 50 years old and those with 5- by 7-inch couplers. AAR efforts to weed out cars incompatible with the tempo of today's railway operation promise to have significant effects on another private car owner which frequently stresses that its fortunes are not allied to those of the railroad industry. Union Tank Car, with a reported 8,000 of the 32,000 overage cars known to be in interchange service by the AAR, will be required to have this equipment off the rails by August 1. Replacement of this UTL carrying capacity should be facilitated by the opening of a $20 million tank car plant in East Chicago, Ind., late last year. "Our production capabilities in the '70s will be strengthened," reports J. R. Kruizenga, vice president—marketing.

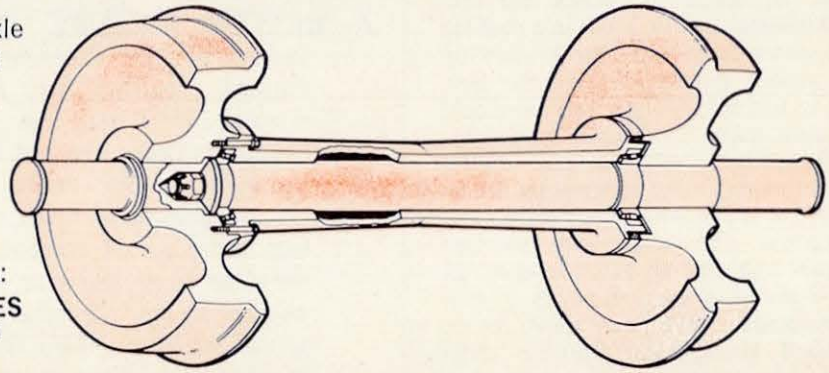
Kruizenga says UTL's prospects are determined primarily by four major industries—chemical, petroleum, food and fertilizer. He sees "a good 1970 . . . maybe slightly better than 1969 . . . and '69 was not a bad year." He feels that the chemical industry will perform much as it did in 1969 and that food industry shipments will be higher. On the other hand, the new depletion ruling might bring about a decline in petroleum shipments and the prospects for fertilizer are only marginal.

(Continued on page 101)

FREE-WHEELING AXLE ELIMINATES CURVE TREAD FRICTION

Revolutionary new free-wheeling axle design available for a forward looking company to develop and sell under license agreement. Dual cross axle design guarantees solid non-wobble construction. Greatly reduces normally encountered wear on wheels and track. Increases hauling capacity of locomotives. Compatible with present trucks. For information write:

SEYMOUR F. JOHNSON ENTERPRISES
4748 Vieja Drive, Santa Barbara, California 93105
Steam Locomotives — Designer and Manufacturer

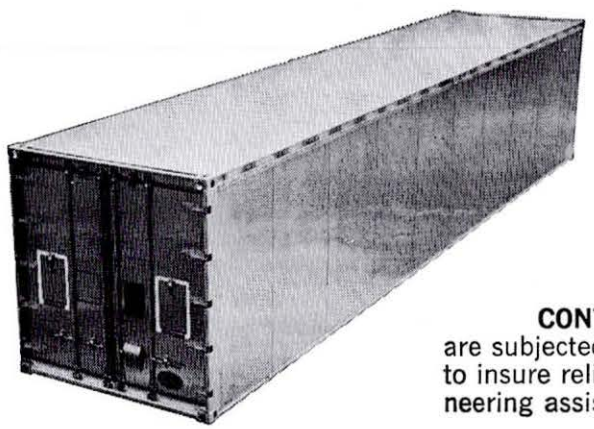


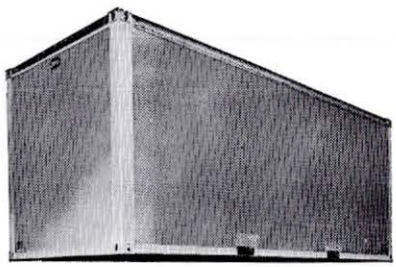
Circle 31 on coupon page 90

TRAILERS • CONTAINERS • CHASSIS

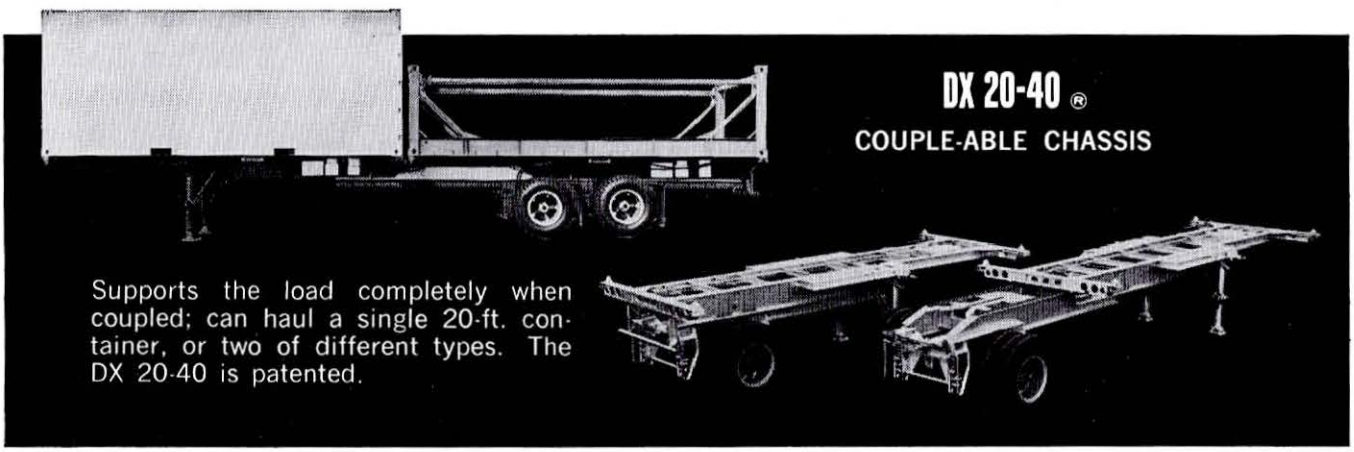
with reliability built in by DORSEY® TRAILERS

PIGGYBACK TRAILERS
for dependable, trouble-free service under the most rigorous conditions. Dry freight vans, open tops, refrigerated trailers and platforms.





CONTAINERS
are subjected to the most exhaustive tests in the industry to insure reliability. Units built to your "specs", or engineering assistance available.



DX 20-40®
COUPLE-ABLE CHASSIS

Supports the load completely when coupled; can haul a single 20-ft. container, or two of different types. The DX 20-40 is patented.

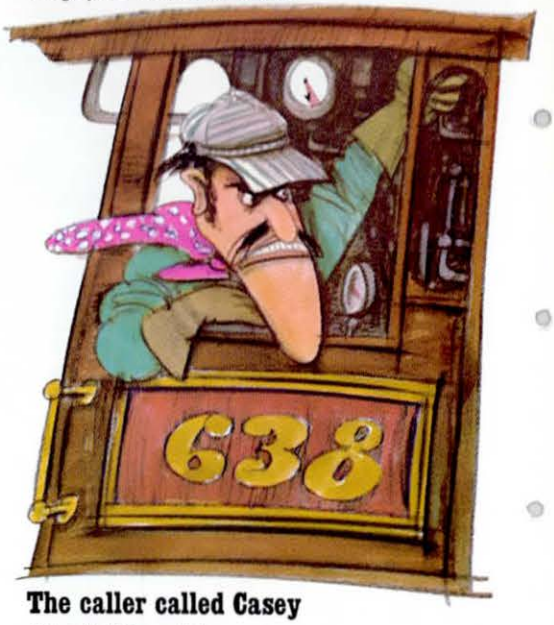
For engineering assistance or quotations, call and a Dorsey Executive Account Manager will be at your desk within hours

DORSEY TRAILERS/ELBA, ALABAMA
A Subsidiary of The Dorsey Corporation

CASEY JONES

(The Brave Engineer)

This is the most famous of all railroad songs. At the time of the tragedy, according to one legend, Casey, throttle-puller of the Illinois Central's crack "Cannonball," was driving No. 638, making a run for a friend who was ill. The train was wrecked at Vaughan, Mississippi, and Casey died at the throttle.

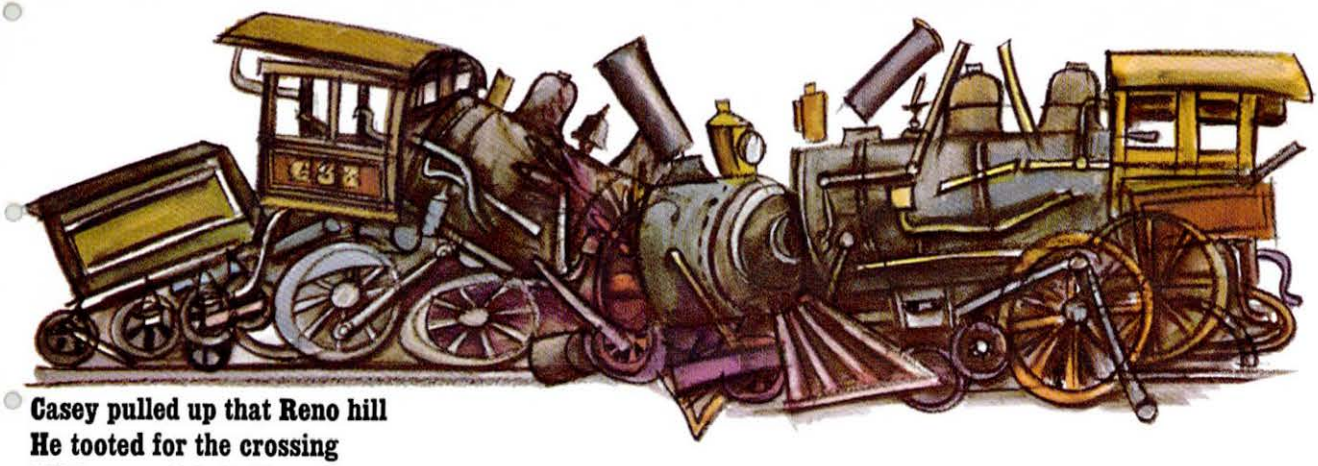


Come all you rounders
If you want to hear
A story 'bout a brave engineer
Casey Jones was the rounder's name
On a six eight wheeler
Boys, he won his fame

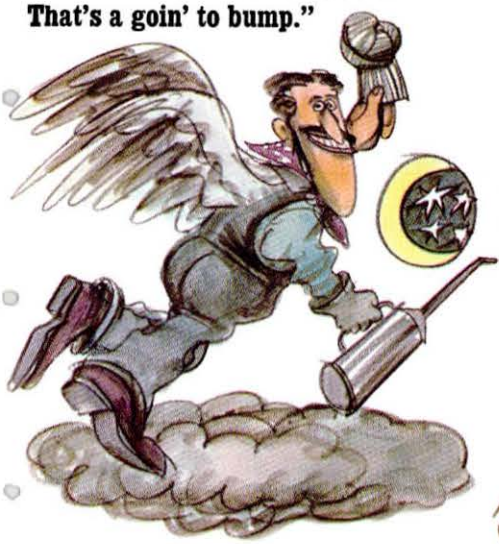
The caller called Casey
At a half past four
Kissed his wife at the station door
Mounted to the cabin
With his orders in his hand
And he took his farewell trip
To that Promised Land.

Casey Jones, mounted to the cabin
Casey Jones, with his orders in his hand
Casey Jones, mounted to the cabin
And he took his farewell trip
To the Promised Land.

Put in your water
And shovel your coal
Put your head out the window
Watch them drivers roll
I'll run her till she leaves the rail
'Cause I'm eight hours late
With that western mail
He looked at his watch
And his watch was slow
He looked at the water
And the water was low
He turned to the fireman
And then he said
We're goin' to reach Frisco
But we'll all be dead.



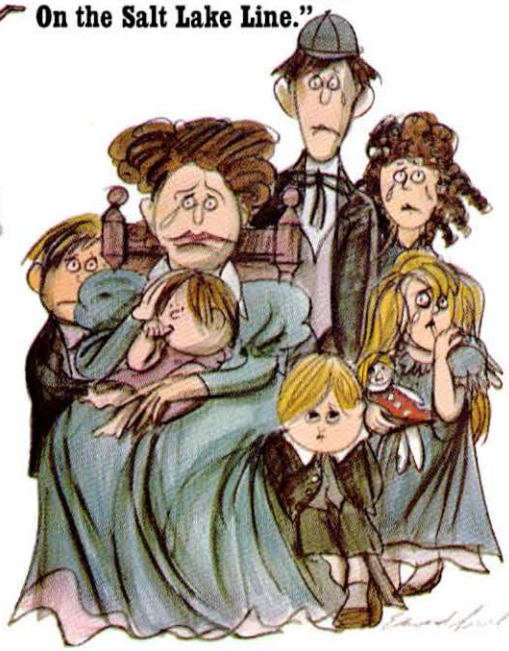
Casey pulled up that Reno hill
He tooted for the crossing
With an awful shrill
The switchman knew
By the engine's moan
That the man at the throttle
Was Casey Jones
He pulled up within two miles
Of the place
Number Four stared him
Right in the face
He turned to the fireman
Said "Boy, you better jump
'Cause there's two locomotives
That's a goin' to bump."



Casey said just before he died
There's two more roads
That I'd like to ride
The fireman said
What could that be

The Southern Pacific
And the Santa Fe.

Mrs. Jones sat on her bed a sigh'n'
Just received a message that
Casey was dy'n'
Said "Go to bed, children, and
Hush your cry'n'
'Cause you got another papa
On the Salt Lake Line."

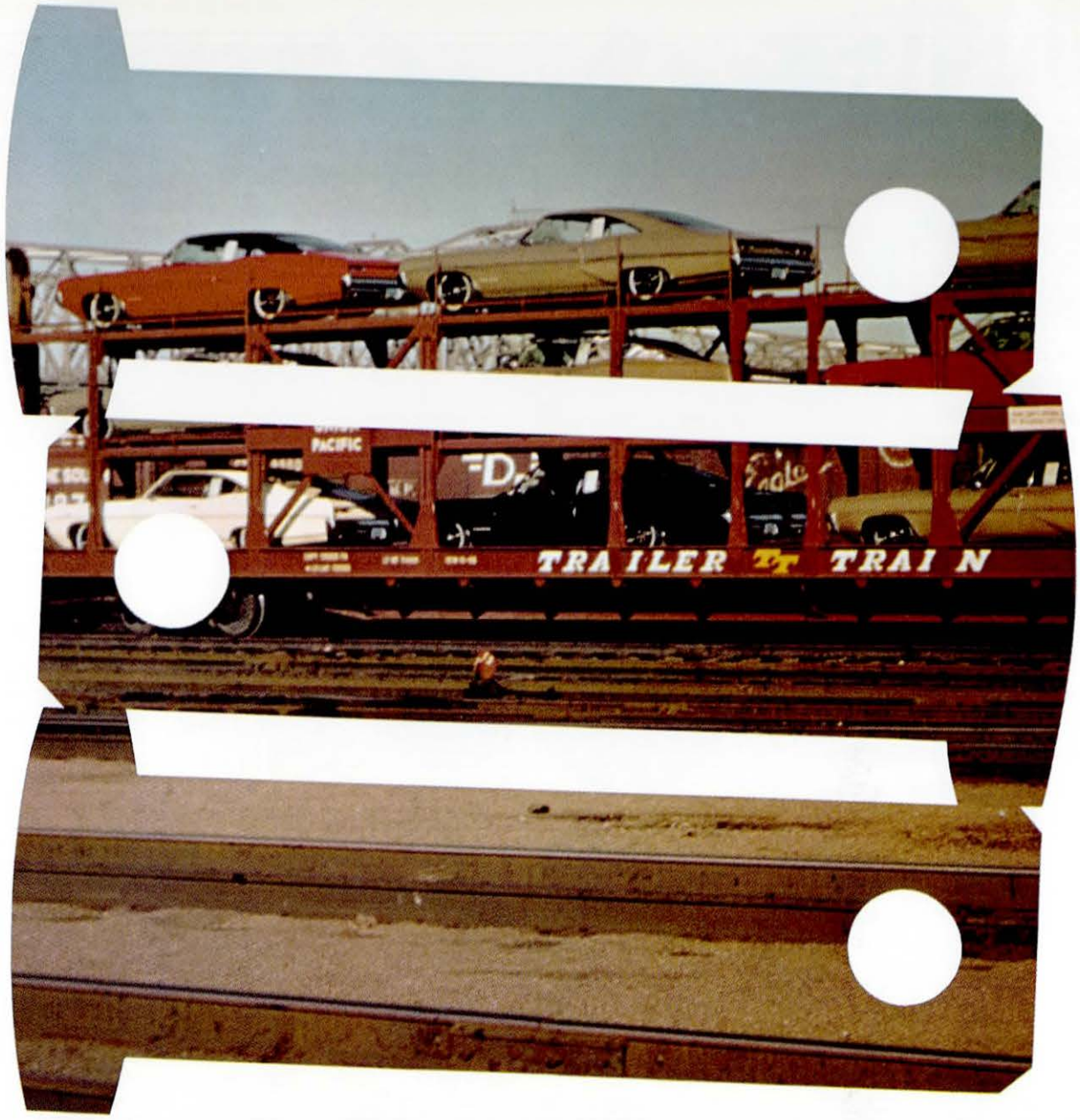


The Casey Jones legend is part of the romance of railroading and that's why we at NDH like it. But, as you know, railroading is a tough, practical business with no tolerance for downtime. We like that, too. New Departure-Hyatt Taper Freight Bearings are made to keep rolling stock out of the shop and on the road with a minimum of maintenance.

NDH Taper Freight Bearings are writing a new chapter in dependability on the roads of America, today. We'll be happy to send you, upon request, a full-color reprint of this advertisement with no commercial message, which you can frame and hang in your office. We think Casey would have liked that.

NEW DEPARTURE HYATT BEARINGS
Division of General Motors Corporation, Sandusky, Ohio 44870

©New Departure-Hyatt Bearings Division, General Motors Corporation 1969. Casey Jones (The Brave Engineer) Copyright 1909 by Newton & Seibert. Copyright renewed and assigned to Shapiro, Bernstein & Co. Inc. Copyright 1937 Shapiro, Bernstein & Co. Inc. "Used By Permission."



Trailer Train takes us for granted.

That's the way our pins are made. To roll hundreds of thousands of miles without the hint of a breakdown. You can put them in your high-mileage cars and forget them. Like Trailer Train has been doing since their first piggy-back hit the rails in 1955.

So far, TTX has used F pins exclusively in *every* car they've built—some 2½ million pins in over 50,000 flatcars. We've earned the right to be taken for granted. The hard way. Railway Products, Ex-Cell-O Corporation, Box 386, Detroit, Michigan 48232.

XLO®

EX-CELL-O CORPORATION

MARKET OUTLOOK

CARLOADINGS

Loadings of revenue freight in the week ended Jan. 3 totaled 386,829 cars, the Association of American Railroads announced. This was an increase of 5,077 cars, or 1.3%, compared with the previous week; a decrease of 19,603 cars, or 4.8%, compared with the corresponding week last year; and a decrease of 31,510 cars, or 7.5%, compared with the equivalent 1968 week. Ton-miles generated by carloadings in the week ended Jan. 3 are estimated at 11.1 billion, a decrease of 3.5% below the corresponding week of 1969 and 1.9% below the 1968 week.

REVENUE FREIGHT CARLOADINGS

Commodity	Dec. 27 week	Preceding week	Per cent change
Grain	21,048	27,892	—24.5
Farm products	17,153	24,035	—28.6
Metallic ores	18,666	27,806	—32.9
Coal	75,262	108,331	—30.5
Crushed stone, gravel & sand	14,539	23,042	—36.9
Nonmetallic minerals	6,216	8,722	—28.7
Grain mill products	16,684	21,579	—22.7
Food & kindred products	19,690	25,162	—21.7
Primary forest products	16,719	26,663	—37.3
Lumber & wood products (except furniture)	11,408	15,380	—25.8
Pulp, paper & allied products	18,440	24,733	—25.4
Chemicals & allied products	22,383	28,149	—20.5
Petroleum products	8,845	11,153	—20.7
Stone, clay & glass products	12,305	18,177	—32.3
Coke	7,985	8,844	— 9.7
Metals & products	19,609	27,533	—28.8
Motor vehicles & equipment	11,524	21,197	—45.6
Waste & scrap materials	9,992	14,837	—32.7
Forwarder & shipper assn. traffic	5,189	6,844	—24.2
All other carloads	46,913	68,359	—31.4
LCL traffic	1,182	1,743	—32.3
Total cars loaded	381,752	540,181	—29.3
CUMULATIVE TOTAL, 52 WEEKS 1969	28,291,939	28,252,541	28,083,751
Estimated revenue ton-miles (billions) 52 weeks 767.2		744.0	719.4

PIGGYBACK CARLOADING

U. S. piggyback loadings for the week ended Dec. 27, 1969, totaled 17,641 cars, carrying 30,096 trailers, compared with 17,066 cars, carrying 27,369 trailers, in the corresponding 1968 week. Loadings for all of 1969 totaled 1,344,123 cars, carrying 2,215,547 trailers, compared with 1,337,149 cars carrying 2,174,616 trailers, in the corresponding period of 1968.

IN CANADA

Cumulative	Revenue Cars Loaded	Total cars Rec'd from Connections
Dec. 14, 1969	3,477,905	1,170,480
Dec. 14, 1968	3,609,441	1,180,573

FREIGHT-TRAIN CARS

● *Frisco.*—Ordered 200 50½-ft, 70-ton, roller-bearing box cars from Pullman-Standard at a cost of approximately $3 million.

● *Great Northern.*—Ordered 250 100-ton steel Center Flow covered hopper cars from American Car & Foundry Division for delivery beginning in June; and 200 52½-ft, 77-ton gondolas from Thrall Car. GN has also doubled a previously-announced order for 50 61½-ft, 100-ton bulkhead flat cars from Thrall Car (RA, Oct. 13, 1969, p. 35).

● *Lehigh Valley.*—Is taking delivery of 100 52½-ft, 100-ton gondolas from Bethlehem. Cars are equipped with slack adjusters, roller bearings and standard high capacity draft gears. They are designed for a concentrated load of 70 tons at the car center.

PIGGYBACK

● *Baltimore & Ohio.*—Will acquire 725 piggyback trailers through a leasing agreement with Intermodal Transportation Systems, Inc. About two-thirds of the new units are being built by Miller Trailers, Inc., of Bradenton, Fla., and the remainder by Theurer, Inc., of Newark, N.J.

● *Missouri Pacific.*—MP Truck Lines and Texas & Pacific Motor Transport will spend almost $3.5 million for 372 units of new transportation equipment. (Both truck lines are wholly owned subsidiaries of the MP system.) Equipment being purchased includes 139 diesel tractors, 182 high-cube-capacity trailers for over-the-road and piggyback service, and 51 city pick-up-and-delivery trucks.

● *Trailer Train.*—Ordered an additional 472 cars as follows: from ACF, 20 89-ft, 4-in. container cars, and 100 89-ft, 4-in. all-purpose cars; from Bethlehem, 140 89-ft, 4-in. standard-level cars and 150 68-ft steel cars; from Pullman-Standard, 43 89-ft, 4-in. low-level cars and 19 60-ft, flat cars. Between Jan. 1 and Dec. 23, 1969, TTX ordered a total of 6,443 new cars. On Dec. 23, TTX had 54,934 cars in service or on order.

LOCOMOTIVES

● *Great Northern*—Ordered 12 3,600-hp F45 diesel-electric units from EMD for June-July delivery.

NEW FACILITIES

● *Illinois Central.*—Will install 280 miles of welded rail in 1970, an increase of 65% in welded-rail installations from 1969 totals. Cross-tie installations will also be up sharply, from 625,000 ties in 1969 to 1 million in '70. The operating budget for IC's engineering department has been set at $44.3 million, an increase of more than 20%.

ORDERS AND DELIVERIES

● Orders were placed in November 1969 for 8,264 new freight-train cars, compared with 3,782 in October and 9,630 in November 1968. No rebuilds were ordered in November, compared with 590 in October and 1,000 in November 1968. Backlog of new cars on order and undelivered on Dec. 1 was 43,460, compared with 42,043 on Nov. 1 and 26,923 on Dec. 1, 1968.

FREIGHT TRAIN CARS DELIVERED AND ORDERED IN NOVEMBER AND BACKLOG OF ORDERS ON DEC. 1, 1969

	Nov. 1969	Oct. 1969	Nov. 1968
DELIVERED			
Built New by Car Builders	4,941	5,181	2,670
Built New in R.R. Shops	1,332	1,791	1,427
Built New—Total	6,273	6,972	4,097
Rebuilt	527	631	1,106
Total Delivered	**6,800**	**7,603**	**5,203**
ORDERED			
To be built New by Car Builders	3,456	3,148	7,830
To be built New in R.R. Shops	4,808	634	1,800
To be built New—Total	8,264	3,782	9,360
To be rebuilt	0	590	1,000
Total Ordered	**8,264**	**4,372**	**10,630**
ON ORDER AND UNDELIVERED			
To be built New by Car Builders	35,361	36,920	21,210
To be built New in R.R. Shops	8,099	5,123	5,713
To be built New—Total	43,460	42,043	26,923
To be rebuilt	3,837	4,364	4,489
Total Ordered	**47,297**	**46,407**	**31,412**

CAR OWNERSHIP

● *Serviceable cars.*—Revenue freight cars in serviceable condition owned by Class I railroads on Nov. 1 totaled 1,360,659, compared with 1,386,822 on Nov. 1, 1968, according to most recent AAR Car Service Division report. Estimated total ownership of all railroad- and privately-owned freight cars on Nov. 1 was 1,786,285 (average capacity: 65.45 tons), compared with 1,801,555 (average capacity: 64.12 tons), on Nov. 1, 1968.

ESTIMATED OWNERSHIP—ALL REVENUE FREIGHT CARS

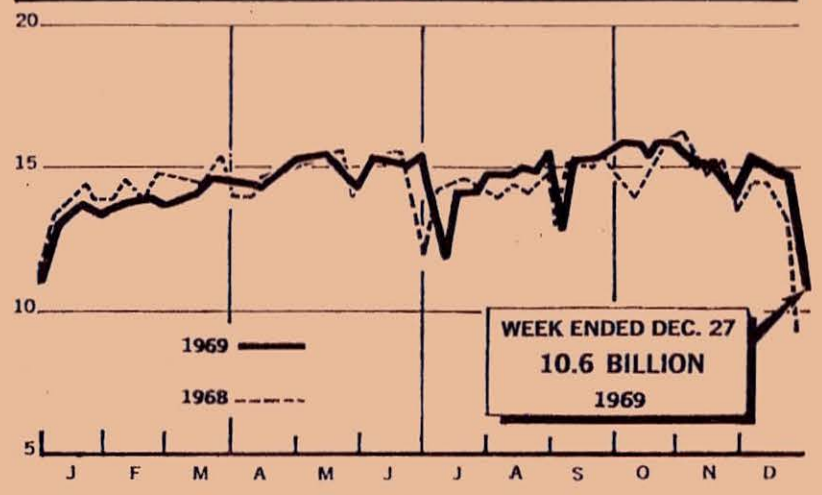
(Nov. 1, 1969 vs. Nov. 1, 1968)

		Box	Covered Hopper	Gondola	Hopper	Flat	Refg.	All Others	TOTAL
Class I	1969	544,831	125,314	193,255	396,736	71,211	54,607	53,704	1,439,658
	1968	552,825	123,046	197,708	412,690	67,883	52,669	56,667	1,463,488
RRO&C Refgs.*	1969	0	0	0	0	0	46,033	0	46,033
	1968	0	0	0	0	0	48,204	0	48,204
All Other Private	1969	1,108	33,007	2,121	2,261	47,821	14,799	175,454	276,571
	1968	1,246	28,207	286	3,833	41,550	16,184	172,737	264,043
Class II & S&T Cos.†	1969	8,282	703	4,494	7,442	556	1,428	1,118	24,023
	1968	9,084	889	5,071	8,307	590	789	1,090	25,820
GRAND TOTAL	1969	554,221	159,024	199,870	406,439	119,588	116,867	230,276	1,786,285
	1968	563,155	152,142	203,065	424,830	110,023	117,846	230,494	1,801,555

* Railroad owned and controlled refrigerator car lines.
† Class II railroads and switching and terminal companies.

RAIL FREIGHT TRAFFIC TRENDS

BILLION TON-MILES (Estimated)



Source: Association of American Railroads

NEW ORDERS FOR MACHINE TOOLS*

	November 1969 ($000)	November 1968 ($000)	11 mos. 1969 ($000)	11 mos. 1968 ($000)
Metal cutting tools	78,900	97,600	1,112,450	969,200
Metal forming tools	30,300	80,200	505,600	355,200

MACHINE TOOL SHIPMENTS*

	November 1969 ($000)	November 1968 ($000)	11 mos. 1969 ($000)	11 mos. 1968 ($000)
Metal cutting tools	91,700	103,550	1,073,800	1,228,150
Metal forming tools	39,250	26,500	371,550	330,650

*Including foreign and domestic.
Source: National Machine Tool Builders' Association.

Current Statistics

Net income, Class I roads
12 months, 1969 ..... $575,000,000
12 months, 1968 569,000,000

New freight cars on order
Dec. 1, 1969 43,460
Dec. 1, 1968 26,923

New freight cars delivered
11 mos., 1969 63,305
11 mos., 1968 51,696

Serviceable cars
Dec. 1, 1969 1,360,795
Dec. 1, 1968 1,385,269

YOU OUGHT TO KNOW

Air clean-up brings business to Kleenburn

Because more and more people are trying to stop polluting the air, there's a boomlet under way for Kleenburn, Wyo., and the operators of the town's low sulphur-content coal mines. Coal loadings out of Kleenburn used to be measured in cars. Now, they're measured in unit trains, of 60 to 65 cars each. With new coal orders from Commonwealth Edison in Chicago and Kansas City Power & Light, Big Horn Mining Co. is working double shifts at Kleenburn, and Burlington is originating three unit trains per week, two destined for Chicago via Havana, Ill., and barge trans-shipment, and one destined for Kansas City via a Kansas City Southern connection.

UP subsidiary buys 130 acres in L.A. area

Union Pacific's real-estate susbsidiary, Upland Industries, has made another multi-million-dollar land purchase. The new acquisition consists of 130 acres in the Los Angeles area. It includes the Fox Hills Country Club property in Culver City. UP will soon announce a major building program in connection with the real-estate deal.

R. L. Banks wins contract to study transit regulators

The Urban Mass Transportation Administration has awarded a $166,900 contract to R. L. Banks & Associates, Inc., of Washington for a one-year study of regulatory agencies having jurisdiction over urban public transportation. DOT Secretary John A. Volpe said the study is designed "to develop methods by which regulatory authorities can stimulate transit service improvements, promote innovation and spur the adoption of new technology."

Perishable commodities seminar set

The 23rd International Conference on Handling Perishable Agricultural Commodities will be held March 9-12 at Purdue University. Sponsors will be the AAR, American Railway Development Association and Purdue, in cooperation with the U.S. and Canadian Departments of Agriculture and railroad inspection bureaus and agencies. General chairman of the conference will be R. J. Taylor, director-agriculture and forestry, Illinois Central.

SP, ATSF set for presentations before the CAB

The similar—but not identical—bids by Southern Pacific and Santa Fe to enter the air-freight forwarding business will apparently go forward together, in Civil Aeronautics Board hearings set to begin March 31. Petitions involving the two roads were originally filed in 1967—SP's for air-freight forwarding rights for Southern Pacific Air Freight Express Inc. and Santa Fe's for authority to control Express Air Freight Inc. through a subsidiary. (RA, Jan. 5/12, p. 8).

"Important work" of RPI cited by Utah Senator

Utah Senator Frank E. Moss has inserted two documents in the Congressional Record which he says are "worthwhile reflections upon the important work of the Railway Progress Institute." At the Senator's request, the Record of Dec. 22, 1969, reprinted in full the interview which Railway Age Editor Luther Miller conducted with three RPI officers (RA, Nov. 17, 1969)—J. W. Henderson, Jr., then chairman of RPI; Frank L. Bredimus, then vice chairman and now chairman; and Nils A. Lennartson, president. The Record also reprinted the text of an address which DOT Secretary John A. Volpe prepared for delivery at the RPI's annual meeting in November. Secretary Volpe said the RPI, along with the Association of American Railroads, had played a major role in winning fast tax write-offs for railroad equipment. "I congratulate this national association of the railway supply industry for such an effective demonstration of assistance to the railroads of our nation which are plagued with such financial problems," said Volpe.

Car market: 70,000 in '70

(Continued from page 92)

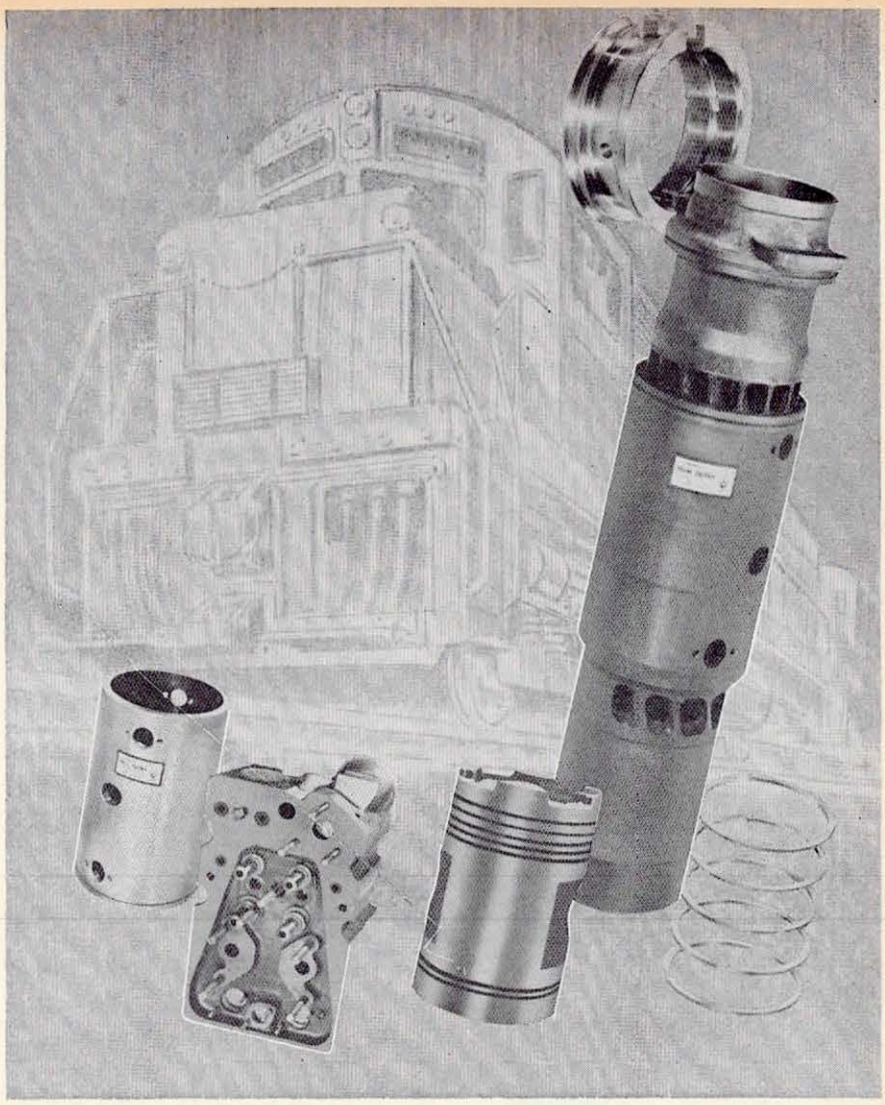
United States Railway Equipment finds that its activities—primarily the leasing of specialty and rebuilt cars—are not as affected by high interest and economic uncertainties as are those of the standard carbuilders. "We are forecasting unit and dollar volume increases for both our specialty car manufacturing operation and our car reconstruction activities," reports John C. Felten, executive vice president of USRE.

"All our market forecasts indicate a continuing increase in the use of specialty freight cars by shippers and project continuing growth in the private car fleets," Felton explains. "Freight cars which are designed for specific purposes fill exact shipper needs and result in more economical overall transportation costs for him. These economic incentives become more important than tax incentives, and therefore, special-purpose cars are generally not subject to the same tax incentive influences as are conventional freight equipment."

In looking at the rebuild market, Felten observes that as the age of the fleet goes up, the need to upgrade and reconstruct freight cars accelerates.

● **Canadian outlook.** Canadian railroads and private car lines probably will be buying equipment at about the same rate as in 1969. The emphasis will apparently be on 70-ton bulkhead flat cars, 85-foot container flat cars, and 100-ton covered hopper cars. Following up its summer order for 1,000 100-ton steel covered hoppers with hydraulic devices for controlling rock and roll (RA, Sept. 8, 1969, p. 41), Canadian National has recently ordered five prototype aluminum cars which are to be used for resolving the same instability problem on ultra-lightweight covered hoppers. If their dynamic problems are resolved, the five cars might be the forerunners of a fleet of aluminum 100 tonners. Already CN operates an extensive fleet of aluminum 70-ton covered hoppers.

● **Rapid transit developments.** The role of lightweight metals seems now to be firmly established in all types of passenger equipment. Stainless steel is being used on the Budd-built cars for Chicago Transit Authority and Long Island Rail Road. General Steel has recently completed a series of stainless cars for the State of New Jersey which are now in use on the Penn Central. New Jersey's next major delivery will be 105 all-aluminum push-pull commuter cars for the Erie Lackawanna. These, like the aluminum cars currently



More for your money is only part of the Hunt-Spiller story

HUNT-SPILLER REPLACEMENT PARTS—Cylinder Liners, Cylinder Heads, Pistons, Jackets, Piston Rings and Bearings—are known the world over to be made from the finest metals—to exact specifications. Hunt-Spiller replacement parts are completely interchangeable with original equipment parts.

The fact that you get more for your money is gravy!

Hunt-Spiller products are rigidly controlled through the complete manufacturing cycle. There's proof of this from service in a variety of railroad, marine, and industrial installations throughout the world.

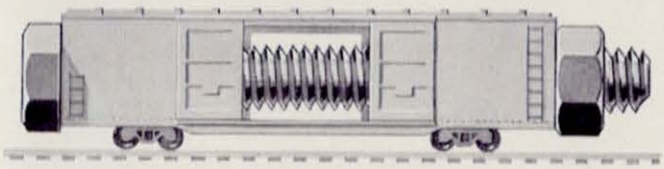
Send for a catalog sheet for the part or parts that you may be needing soon.

HUNT-SPILLER
MANUFACTURING

180 Sylvester Road South San Francisco, Calif. 94080
(415) 871-4971—Cable: Huntspil Telex: 349-468
A Division of Power Products, Inc.

Circle 33 on coupon page 90

We've been helping hold you together since 1878



Railroads and car builders have been using Lanman bolts and nuts to help hold freight cars and railway equipment together for over 90 years. What you want . . . safety, reliability, economy . . . is built into every Lanman bolt. Your special bolts, from ¼" to 4", are our standards.

LANMAN BOLT & FORGE COMPANY, Inc.

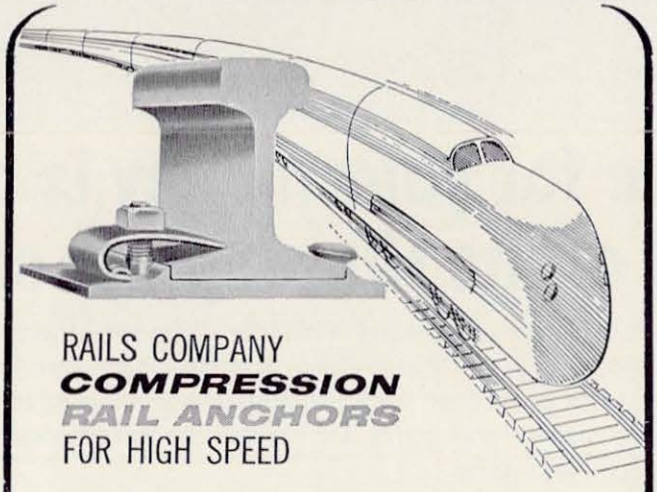
Member Railway Supply Association, Inc.

LBF

Bolts made to AAR Specifications

475 EAST 151st STREET • EAST CHICAGO, INDIANA 46312
(219) 398-0275

Circle 34 on coupon page 90



RAILS COMPANY
COMPRESSION
RAIL ANCHORS
FOR HIGH SPEED

- Dependable, two way uniform holding proven in service!
- Anchor in both directions with one Compression Rail Anchor
- Costs less per mile
- Tops for welded rail, turnouts, bridges and crossings — fits all rail sections
- New! — Flexiclip® for concrete ties

Write or call today for descriptive literature

THE RAILS CO.

Maplewood, N. J. 07040 • Omaha, Neb. 68102
Chicago, Ill. 60604 • San Francisco, Calif. 94105
In Canada: IEC-Holden Ltd.

Circle 35 on coupon page 90

being built for the Massachusetts Bay Transportation Authority, will be produced by Pullman-Standard.

There was a new entrant in the highly competitive transit field at mid-1969. Rohr Corporation won the $66.7 million contract for the first 250 cars for San Francisco's Bay Area Rapid Transit, with deliveries of these 80-mph aluminum units to begin late this summer. R. J. Rucci, manager of Rohr's rapid transit division, says his firm is "applying advanced aerospace systems engineering and manufacturing technology to the development and building of commuter and intercity rapid transit vehicles which, we believe, will become a substantial part of our business."

● **The Aerotrain approach.** Recently Rohr has announced its agreement with the French designer for U.S. rights to the Bertin Aerotrain, an air-cushion vehicle which has already operated 265 mph (RA, Jan. 5/12, p. 30). Rohr sees this concept applicable to intercity travel and for airport access.

W. Ashley Gray, Jr., president of General Steel Industries, reports that GSI's St. Louis Car Division has an $87.9 million backlog for rapid-transit and commuter cars, the largest in its history and the industry's biggest.

● **More for passengers.** "There is no question," observes Gray, "that the Seventies will see a tremendous increase in spending for improved commuter railroad operations and rail-based transit systems. It is estimated that more than eight thousand new commuter and rapid transit cars will have to be built.

St. Louis Car is cooperating with ACF in production of the first Vert-A-Pac automobile cars for the enclosed, on-end shipment of new compact autos. GSI's Castings Division is placing major emphasis on the design and manufacture of railroad industry products. "The railroad supply industry will be responsible," says Gray, "for providing the advanced equipment needed to support new levels of railroad operation and dependability—both in the movement of freight and in the very promising markets for urban, suburban and interurban movements of people."

The GSI president says prospects for an active 1970 have been enhanced by the new tax bill "with railroads the only major industry to be granted any exemptions from the repeal of the investment tax credit." Looking a bit further, be observes that there will be many "opportunities for growth." The nation is heading into an era of unprecedented transportation demand "and there is good reason to expect the railroads to grow with, and even, ahead of the overall growth rate. The cost advantages of moving goods by rail are becoming steadily more compelling in this era of inflationary pressure." ■

Advertisers Index

Abex Corporation 16-17
ACF Industries, Inc. 10-11
Alco Products Service, Inc. 12
Baldwin-Lima-Hamilton Corp. 25
Buffalo Brake Beam Company ..... IFC
Cardwell Westinghouse Company 32
Dick & Merle-Smith 88
Dorsey Trailers, Inc. 93
Dresser Transportation Equipment Division 15
Electro Motive Division, General Motors Corp. . . 82-83
Ex-Cell-O Corp. 88
Farrel Company 21
General Electric Company 9
General Steel Industries, Inc. ..... BC
Greenville Steel Car Co. 6
Hunt-Spiller Manufacturing 101
International Car Corp. 24
Johnson Enterprises, Seymour F. 92
Lanman Bolt & Forge Co. 102
LeTourneau, Inc., R. G. 86-87
Lord Manufacturing Company 20
Magor Division, Fruehauf Corp. 4
McDonnell Douglas Corp. ..... IBC
National Car Rental 85
National Castings Div. 46-47
New Departure/Hyatt Bearings 94-95
Pullman-Standard 78-79
Rails Company, The 102
Railway Educational Bureau 50, 80
Sardello, Inc. 88
Servo Corporation of America 3
Shell Oil Company 18-19
Sperry Rail Service Div. 64
Stanray Corporation 28
Stucki Company, A. 52
Thrall Car 26-27
Timken Roller Bearing Company, The 22-23
Unit Rail Anchor Co. 89
Universal Railway Devices 74
Vapor Corporation 50-51
Woodings-Verona Tool Works 76

FOR SALE

One (1) Bowser Serv-A-Train, Model 278-A, with self-contained filter, meter, pump and other accessories, for delivering diesel fuel at rate of 25 gallons per minute maximum. Also equipped with Xacto Meter and Model K Recording Printer Dial. Purchased new in 1957 and is in its original crate. For further details, contact T. J. McBride, Storekeeper, B. A. & P. Railway Company, Box 1421, Anaconda, Montana, 59711, or telephone Area Code 406, 563-2661.

USED MULTI-LEVEL RAMPS
Two Page & Page ML 16 Traversing Auto Ramps — Now Surplus Due to Seattle Area Facility Consolidation. Contact T. R. Swennes, Convoy Company 3900 N.W. Yeon Ave. Portland, Ore. 97210

HAVE A HEART
SUPPORT
YOUR
HEART FUND

RADIO-COMMUNICATIONS TECHNICIAN — Alexandria, Va. area. Applicant must be high school graduate with at least a second-class FCC Radio License. Salary based on education and previous experience. Liberal fringe benefits. Railroad will pay relocation expenses. Contact Mr. T. B. Choate, Director of Personnel, Richmond, Fredericksburg and Potomac Railroad Co., Room 209 Broad Street Station, Richmond, Virginia 23220. An equal opportunity employer.

IMAGINATIVE TRANSPORTATION CONSULTING

Economic and Financial Studies
Merger Evaluations and Analyses
Operations Planning and Implementation
Traffic, Sales and Market Planning
Inter-city Passenger Studies
Commuter Service Marketing and Operations
Equipment Selection and Utilization
ICC Case Preparation and Presentation

SYSTEMS ANALYSIS and RESEARCH CORPORATION
30 Boylston St., Cambridge, Mass. 02138
Write for Brochure
Cambridge • Los Angeles • New York • San Diego • Washington

SUPERVISOR
RAILWAY SIGNAL

Major railway system has immediate vacancy in its Signal Department for a Supervisor of Maintenance and Operations. 4 year college degree and Railway Signal background are absolute requirements. An outstanding opportunity to join the management team of one of the most modern and progressive railway systems in the U. S. Reply in strict confidence with complete resume of education and work experience. Salary history and requirements must be included in resume. Reply to Box 263, Railway Age, 29 E. Madison St., Chicago, Ill. 60602

Advertising Sales Department

Chicago, Ill. 60602
29 E. Madison St.
(312) 641-5815
C. James Fisher—vice president—sales
Kerry F. Sheeran—regional vice president
John M. Brennan—regional sales manager
William J. Lyneis—district manager

New York, N. Y. 10007,
30 Church St., (212) 964-3060
W. Arthur Cubbage—regional sales manager
Charles E. Keil—regional sales manager

Pittsburgh, Pa. 15219, Room 1230,
(412) 471-7871
Frick Building
Ronald M. Giallonardo—regional sales manager

Dallas, Tex. 75206
Noel Page Building
6400 N. Central Expressway
(214) 361-6972
Joseph Sanders

Los Angeles, Cal. 90025
11704 Wilshire Blvd.
(213) 477-4004
Fred Klaner, Jr.

San Francisco, Cal. 94133,
515 Pacific Ave.
(415) 421-7004
Lewis A. Vogler & Co.

London S. W. 1, England
01-839 6318
67/68 Jermyn St., St. James's
Max F. Holsinger, Peter Clifton, Alan Berg

Manchester 22, England
Haletop
Wythenshawe Civic Center
Ian Goulden

Paris, 8e, France
70 Rue de Ponthieu
Stephen Brown-Joussard

4 Düsseldorf-Rath
Eitelstrasse 32
Max F. Holsinger, E. Hillerbrand, Herbert Haibt, Reinhard Schomburg

Tokyo, Japan
Sun Gain Shia, Ltd.
Shiba Nikkatsu Bldg.
13, Shiba Park
Minato-Ku
C. H. Yiu, Managing Director

VIEWPOINT

The New Year begins to look a little happier

In the waning weeks of 1969, a thickening cloud of gloom hung over the railroads. It was the result, partly, of persistent talk of a national recession in the making; and, partly, of some pessimistic projections that came from within the industry itself.

The air is now beginning to clear—and the outlook is considerably sunnier today than it was just a few weeks ago. For one thing, that "recession" is starting to look more like a temporary slowdown, with a firm pickup expected in the second half as the economy begins to re-heat. For another, it is beginning to be recognized that certain late-1969 projections badly understated the industry's continuing vitality in the face of adversity.

—We now know (and are pleased to record in the Review section of this issue) that railroads not only hauled a record volume of traffic in 1969 and collected record revenues for doing so; they also managed to bring down to net slightly more than they did in 1968, despite year-long official estimates that income would decline.

—We now know that 1969 new-equipment orders were being underestimated up to a very late point. With new-car orders through Oct. 31 totaling 68,000 cars, official estimates were that orders for the entire year would amount to only 72,000. Actually, orders for November topped 8,000. So in the first 11 months alone, orders easily surpassed those anticipated for the entire year. Final approval of fast tax-write-offs for railroad equipment suggests that this trend will continue.

—We now know that despite all of the storm signals raised during the year, railroads were nonetheless able to increase their investment in capital improvements by more than $200 million.

Based on all this, the editors of Railway Age now forecast—and hopefully record in the Outlook section of this issue—capital expenditures totalling around $1.6 billion in 1970, the main emphasis again being on equipment but with proportionately higher amounts going to fixed plant and maintenance than in recent years.

WEALTHY? NO. HEALTHY? YES.

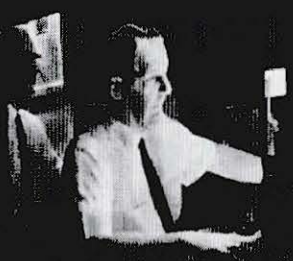
We don't mean to suggest that all is well with the industry. Railroads desperately need successes this year at the bargaining tables, and before the ICC, and in the Congress. Their rate of return remains dangerously low; their rate of capital investment, while eminently respectable in terms of the past, is nowhere near sufficient to provide for the future.

What we do suggest is that railroads are entering the new decade far healthier than is generally recognized.

One of this industry's greatest problems continues to be its penchant for putting its worst statistic forward—a compulsive pessimism that appearently derives from a belief that it is unlucky to admit that you're as well off as you are.

It is equally bad, of course, to pick only that statistic which gives aid and comfort to the compulsive optimist.

In this issue, we present all the figures, the good, the bad the indifferent. To us, they suggest that things were not quite as bad as they seemed in the old year—and that the new year may be a little happier than it looked in the distance.



Academy for Locomotive Engineers

The long, hard school of experience is no longer enough for efficient operations. What's needed is the kind of "college degree in railroading" our Train Simulator gives to engine crewmen. □ Conductron Simulators give a man the skills, confidence and experience of lengthy on-the-road observation in a few weeks of in-the-cab learning. Train dynamics are computed on the basis of individual cars, and operation is faithfully reproduced through big screen, panoramic visual displays, plus realistic sound, motion, and control "feel." □ Graduates have a higher degree of confidence. They learn standardized procedures, they gain multi-configuration expertise, and they cope with emergency situations—in complete safety, and without tieing up the railroad or rolling stock. □ Conductron Simulators also have application to operations and research. Their high-speed, high-capacity computer permits greater flexibility in train performance evaluation, with or without man in the loop. □ If you'd like to learn more about Conductron Train Simulators, why not have your professionals talk to ours? Southern Pacific did. In fact, you're looking at the result.

CONDUCTRON CORPORATION
12254 Bellflower Boulevard, Downey, California 90241

THE SOLID FOUNDATION

The GSI Underframe

From end to end . . . the entire cast steel underframe is solid strength. It's engineered to take IMPACT AND SHOCK without damage. No extra devices are needed.

Unique one-piece design eliminates stress concentration points. Optimum metal distribution puts the strength where it's needed.

The GSI Underframe is a SOLID FOUNDATION for your flats and bulkhead cars. It keeps them maintenance-free.

Circle 3 on coupon page 90

GENERAL STEEL INDUSTRIES INC.

CASTINGS DIVISION | GSI

Granite City, Ill. • Philadelphia, Pa. • San Francisco, Calif.